DOCUMENT RESUME

ED 035 006 24 CG 004 492

AUTHOR	McDill, Edward L.; And Others
TITLE	The Center for the Study of Social Organization of Schools and the Learning Process. Third Annual Report.
INSTITUTION	Johns Hopkins Univ., Baltimore, Md. Center for the Study of Social Organization of Schools.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C. Bureau of Research.
BUREAU NO	BR-6-1610
PUB DATE	31 Jul 69
GRANT	OEG-2-7-061610-0207
NOTE	222p.
EDRS PRICE	EDRS Price MF-$1.00 HC-$11.20
DESCRIPTORS	*Administrative Principles, Ancillary Services, Disadvantaged Youth, Educational Change, Language, Political Issues, *Program Content, *Program Descriptions, *Research and Development Centers, *Research Projects, Simulation, Socialization, Staff Role

ABSTRACT

A basic overview of Research and Development (R and D) Centers programs, and the various larger institutions of which they are a part, is given. The administrative and program structure of the Johns Hopkins R and D Center follows, with an organizational chart, staff list, and a program and project register included. A descriptive overview of the Johns Hopkins R and D Center is given. Program activities and accomplishments are discussed in separate sections. Included are: (1) simulation games, (2) education and social change, (3) socialization, social class and cognitive style, (4) a program for the study of standard language acquisition in educationally disadvantaged children, and (5) the politics of public education. A general overview as well as specifics from each program are given. The independent projects program is discussed next, followed by administrative and support services programs. Appendices including a bibliography of center publications and references are given. (Author/KJ)

BR-6-1610
PA-24.
OE-BR

ED035006

THE JOHNS HOPKINS UNIVERSITY
THE CENTER FOR THE STUDY OF SOCIAL ORGANIZATION OF SCHOOLS

THIRD ANNUAL REPORT

CG 004 492

THE U.S. OFFICE OF EDUCATION
GRANT NO. OEG-2-7-061610-0207
BUREAU NO. 6-1610
JULY 31, 1969

ED035006

Submitted to the U.S. Commissioner of Education

RESEARCH AND DEVELOPMENT CENTERS

TITLE	The Center for the Study of Social Organization of Schools and the Learning Process
GRANT NO.	OEG-2-7-061610-0207
BUREAU NO.	6-1610
PERIOD COVERED	July 1, 1968 - June 30, 1969
SUBMITTED BY	The Johns Hopkins University Baltimore, Maryland 21218
INITIATED BY	Edward L. McDill Edward L. McDill Director and Associate Professor of Social Relations
DATE TRANSMITTED	July 31, 1969

TABLE OF CONTENTS

Page

The R and D Centers Program 1

Administrative and Program Structure 5

Descriptive Overview of Johns Hopkins R and D Center 21

Program Activities and Accomplishments

Program I: Simulation Games 35

Program II: Education and Social Change: The Development of a System of Social Accounts 61

Program III: Socialization, Social Class, and Cognitive Style 89

Program IV: A Program for the Study of Standard Language Acquisition in Educationally Disadvantaged Children 139

Program V: The Politics of Public Education: A Comparative Study of School Board Operations 191

Independent Projects Program 197

Administration and Support Services Program 207

Appendices ....

A. Bibliography of Center Publications 209
B. References 217
C. Distribution of this Report 221

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

THE R & D CENTERS PROGRAM

THE R & D CENTERS PROGRAM

This Center is one of a system of nine Educational Research and Development Centers funded under the Cooperative Research Act (as amended by Title IV of the Elementary and Secondary Education Act of 1965). The program was organized as one response to an increased national awareness of the importance of finding solutions to critical educational problems.

More specifically, the R & D Centers program was devised to fill a unique role in relation to other forms of educational research and development, by providing a prime avenue for (a) bringing together a critical mass of interdisciplinary talent and other research resources from the behavioral sciences and other disciplines, (b) focusing on a crucial educational problem area by means of a long-range coordinated attack on large-scale problems, and (c) moving promising innovations through development toward an impact on actual educational practice. Although R & D Centers generally do not carry the innovative process through to final implementation themselves, they _are_ charged with the responsibility for projecting a further route toward that goal by enlisting the interest of a regional educational laboratory, commercial developer, State or local agency, coordinating body, or other appropriate institution.

Although these centers have had an existence of only three to five years in which to build up their program, they have already recorded some significant steps toward the achievement hoped for, and this Annual Report describes some of the accomplishments of one of these centers. The list of all nine R & D Centers is as follows:

Learning Research and Development Center, University of Pittsburgh (1964)

Center for the Advanced Study of Educational Administration, University of Oregon (1964)

Wisconsin Research and Development Center for Cognitive Learning, The University of Wisconsin (1964)

Research and Development Center in Educational Stimulation, University of Georgia (1965)

Research and Development Center for Teacher Education, University of Texas at Austin (1965)

Stanford Center for Research and Development in Teaching, Stanford University (1965)

Center for Research and Development in Higher Education, University of California at Berkeley (1965)

Center for the Study of Evaluation, University of California at Los Angeles (1966)

Center for the Study of Social Organization of Schools and the Learning Process, The Johns Hopkins University (1966)

Also funded through this same program is the National Laboratory on Early Childhood Education, which consists of a group of six university-based centers coordinating their research and development efforts through a National Coordination Center at the University of Illinois.

* * * * * * *

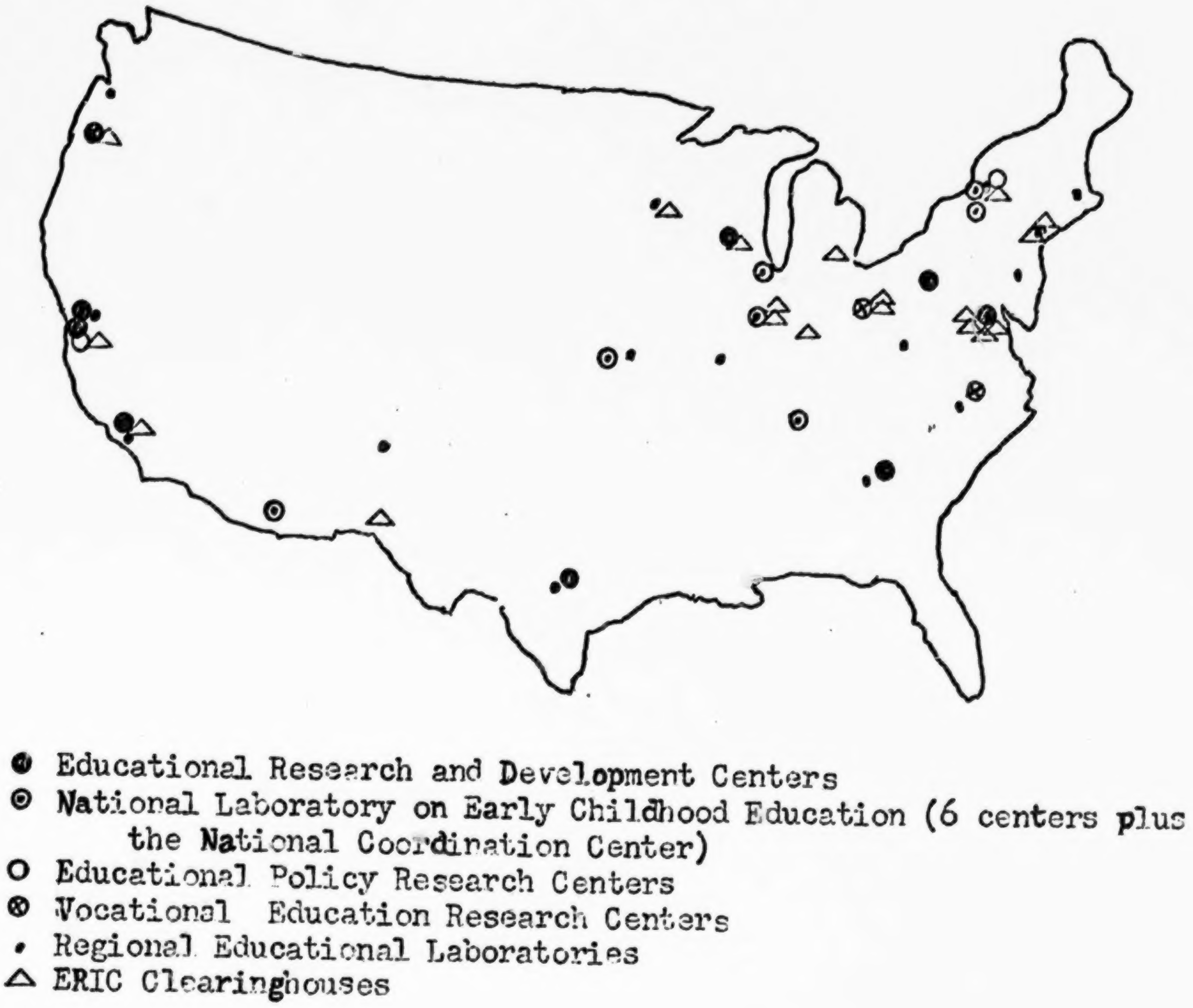
The Educational Research and Development Centers are part of a larger set of institutions which contribute in specialized ways to the improvement of educational practice. These include:

o The two Educational Policy Research Centers, charged with providing a continuing examination of future educational needs and resources for the years 1980-2000.

- The two Vocational Education Research Centers, established under the provision of the Vocation Education Act of 1963.

- The system of 15 Regional Educational Laboratories, each of which concentrates on specific problems concerned with the development, demonstration, and dissemination of educational alternatives, materials, and practices for the schools; some of these have close relationships with the Educational Research and Development Centers.

- The Educational Resources Information Center (ERIC), a nationwide network for acquiring, selecting, abstracting, indexing, storing, retrieving, and disseminating information about educational research and resources, including 19 ERIC Clearinghouses each providing coverage of a particular educational area.


● Educational Research and Development Centers
◎ National Laboratory on Early Childhood Education (6 centers plus the National Coordination Center)
○ Educational Policy Research Centers
⊗ Vocational Education Research Centers
• Regional Educational Laboratories
△ ERIC Clearinghouses

ADMINISTRATION AND PROGRAM STRUCTURE

ADMINISTRATION AND PROGRAM STRUCTURE

Hopkins Center Organizational Structure

Assisting the Center Director are three administrative officers: an Assistant Director who also has research and development responsibilities; an Executive Assistant; and a Programs Coordinator and Liaison Officer. These three officers have responsibility for aiding the Director in administering and coordinating the various activities of the Center. The other functions which are Center-wide in nature are performed by the Support Services Program which is divided into two units, the Computer and Data Processing Unit and the Experimental Design and Statistical Analysis Unit.

The Director is assisted in policy formation and program planning and development by three key committees: the Outside Advisory and Evaluation Committee, the Executive Committee, and the Internal Planning Committee.

Board of Control

This group, which is the Center's general policy-making body, is composed of the following members:

Dr. Allyn W. Kimball, Chairman of the Board and Dean of the Faculty of Arts and Sciences, The Johns Hopkins University

Dr. Orlando Furno, Assistant Superintendent for Research, Baltimore City Public Schools

Dr. Edwin S. Mills, Professor and Chairman of the Department of Political Economy, The Johns Hopkins University

Dr. Peter H. Rossi, Professor and Chairman of the Department of Social Relations, The Johns Hopkins University

Dr. Timothy B. Smith, Professor and Chairman of the Department of Education and Professor of History, The Johns Hopkins University

Dr. Warren Torgerson, Professor of Psychology, The Johns Hopkins University

Outside Advisory and Evaluation Committee

The function of this panel, composed of prominent educationists and social scientists, is to assess the effectiveness with which the research, development, organizational and operational procedures of the Center are serving its current objectives and also to provide advice concerning long-range activities and goals. Each year the Committee visits the Center for a review of its recent accomplishments and its future plans.

The Committee consists of the following members:

Dr. Edmund W. Gordon, Professor of Education, Teachers College, Columbia University

Dr. Frederick J. McDonald, Associate Dean, School of Education, New York University

Dr. Sam D. Sieber, Senior Research Associate and Director of Educational Research Program, Bureau of Applied Social Research, Columbia University

The Executive Committee

Senior faculty members at Johns Hopkins who have distinguished themselves in educational and social science research and who hold key research and development positions in the Center comprise this Committee. The body aids the Director in formulating and implementing R and D plans.

In addition, it initially reviews and periodically assesses the progress of each program and independent project sponsored by the Center.

The Executive Committee:

Dr. James S. Coleman, Professor of Social Relations

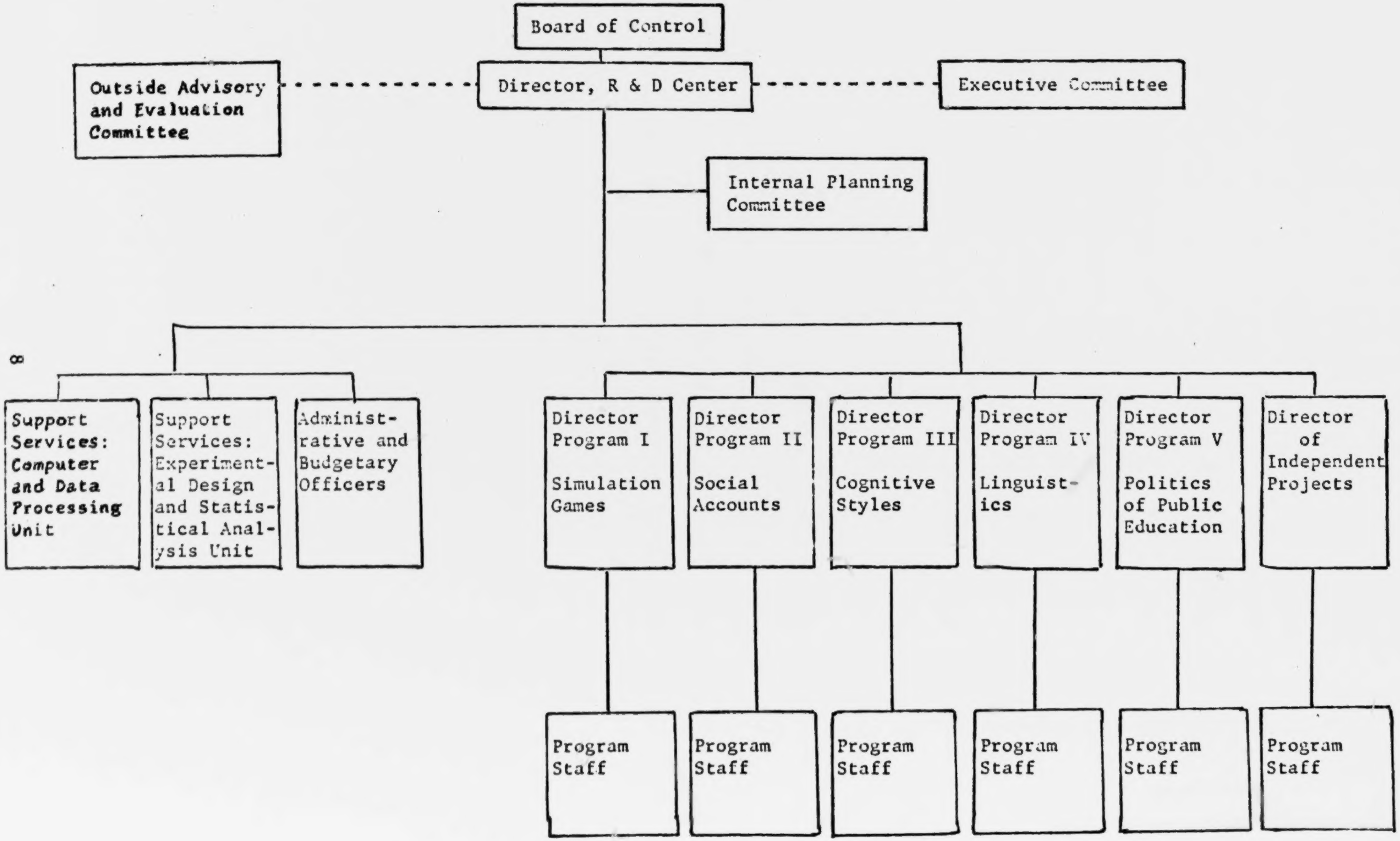
Dr. Peter H. Rossi, Professor and Chairman of the Department of Social Relations

Dr. Julian C. Stanley, Professor of Education and Psychology

Internal Planning Committee

This committee, consisting of the members of the Executive Committee, the major administrative staff, and R and D program directors, has two functions. First, it is intended to effect close working relationships, coordination, and interdependence among R and D programs. Secondly, it has the responsibility of providing the Director and the Executive Committee with informal advice concerning long-range R and D plans as well as changes in existing programs and projects.

ORGANIZATIONAL CHART, JOHNS HOPKINS R AND D CENTER


Board of Control
Outside Advisory and Evaluation Committee
Director, R & D Center
Executive Committee
Internal Planning Committee
Support Services: Computer and Data Processing Unit
Support Services: Experimental Design and Statistical Analysis Unit
Administrative and Budgetary Officers
Director Program I Simulation Games
Director Program II Social Accounts
Director Program III Cognitive Styles
Director Program IV Linguistics
Director Program V Politics of Public Education
Director of Independent Projects
Program Staff
Program Staff
Program Staff
Program Staff
Program Staff
Program Staff

Center Professional and Technical Staff Listed by Program

	Name	Center Title	Johns Hopkins Faculty Appointment
Administration Program			
	Edward L. McDill	Director*	Associate Professor of Social Relations
	John L. Holland	Director**	Professor of Education
	James McPartland	Assistant Director	Assistant Professor of Social Relations
	Edward J. Harsch	Executive Assistant to the Director	
	Martha O. Roseman	Program Coordinator and School Liaison Officer	
Support Services Program			
	Julian C. Stanley	Director, Experimental Design and Statistical Analysis Unit	Professor of Education and Psychology
	Tom Houston	Assistant Director of Experimental Design and Statistical Analysis Unit	Assistant Professor of Education
	Nancy Karweit	Director, Computer and Data Processing Unit	

---

* Resigning August 31, 1969

** Effective September 1, 1969

	Name	Center Title	Johns Hopkins Faculty Appointment
Program I: Simulation Games			
	James S. Coleman	Program Co-Director	Professor of Social Relations
	Michael Inbar	Program Co-Director	Visiting Assistant Professor of Social Relations (Part-time)
	Clarice Stoll	Program Research Scientist	Research Associate, Department of Social Relations
	Lindy Harry	Program Field Director	
	Samuel Livingston	Program Curriculum Designer	
	Dove Toll	Program Curriculum Designer	
Program II: Social Accounts			
	Zahava D. Blum	Program Co-Director	Research Associate, Department of Social Relations
	James S. Coleman	Program Co-Director	Professor of Social Relations
	Peter H. Rossi	Program Co-Director	Professor of Social Relations
	James McPartland	Program Research Scientist	Assistant Professor of Social Relations

	Name	Center Title	Johns Hopkins Faculty Appointment
Program III: Cognitive Style			
	Doris R. Entwisle	Program Co-Director	Associate Professor of Electrical Engineering and Social Relations
	Ellen Greenberger	Program Co-Director	Research Associate, Department of Social Relations
	Robert Hogan	Program Co-Director	Assistant Professor of Psychology
	Jeanne O'Connor	Program Research Assistant	
Program IV: Standard Language Acquisition			
	Catherine Garvey	Program Director	Lecturer, Department of Social Relations
	Thelma Baldwin	Program Associate Director	Research Associate Department of Social Relations
	John Guthrie	Program Research Scientist	Assistant Professor of Education
	Edmund Anderson	Program Associate Research Scientist	

	Name	Center Title	Johns Hopkins Faculty Appointment
Program V: Politics of Public Education			
	Robert L. Crain	Program Co-Director	Associate Professor of Social Relations
	Peter H. Rossi	Program Co-Director	Professor of Social Relations
Program VI: Independent Projects			
"An Economic Analysis of Equality of Educational Opportunity"*			
	John M. Owen	Project Director	Assistant Professor of Political Economy
"Comparative Educational Organization Structures, Their Inputs and Outputs"			
	David Livingstone	Project Director	
"The Computer as a Responsive Educational Environment"			
	James S. Coleman	Project Co-Director	Professor of Social Relations
	Nancy Karweit	Project Co-Director	
"Classroom Applications of Research in Expectation Theory"			
	Murray Webster	Project Director	Assistant Professor of Social Relations

---

* Project Completed June 30, 1969

Program VI (cont'd)

Name	Center Title	Johns Hopkins Faculty Appointment
"Student Involvement in Decision-Making Processes of Secondary Schools"		
James McPartland	Project Co-Director	Assistant Professor of Social Relations
Edward L. McDill	Project Co-Director	Associate Professor of Social Relations
Colin Lacey	Project Co-Director	Visiting Assistant Professor of Social Relations
"Influence Processes in the School"		
James Fennessey	Project Co-Director	
Mary S. McDill	Project Co-Director	

Relationships with Outside Agencies

1. Local School Systems. Since the Center was founded it has maintained a formal working relationship with the Baltimore City Public School System. A member of the Superintendent's staff serves on the Board of Control, the primary policy-making body of the Center. A number of Baltimore City elementary and secondary schools serve as regular sites for research and development activities of the Center. In turn, professional and technical staff of the Center act in an informal advisory capacity to the System. A less formal, yet similar relationship exists between the Center and the Baltimore County Public School System.

2. Maryland State Department of Education. During the past year a meaningful link was established with the State Department of Education. Specifically, an informal working agreement developed in areas of common interest such as research in greater "student responsibility" in schools and in conditions facilitating or impeding changes in conventional organizational practices and curricula.

3. Regional Laboratories. Recently the staff of the Simulation Games Program began collaboration with the Center for Urban Education, New York City. The project involves the use of recreational settings as locations for playing educational games. A pilot center was established in New York in the summer of 1969 for testing the basic design of the project. A unique characteristic of the project is that the games will be taught not by adults, but by teenagers to younger children. In conjunction with this effort, evaluation studies will be undertaken of the effects of the project on youngsters, particularly the role of games. In addition, the youngsters will be studied concerning the everyday games they play. Hopefully, this effort will produce data useful to the Simulation Games Program in its basic research on the relationship between games and childhood socialization. There are two broad, long-range goals for the project: (1) establishment of a prototype educational setting operated by local residents and youth, and (2) development of special educational games compatible with the gaming interests of various age groups.

PROGRAM AND PROJECT REGISTER

THE JOHNS HOPKINS R&D CENTER

6-1610
BR No.

Date Prepared July 1969

Code Number	Date Initiated	Title	Investigator(s)	Professional Man-Years During FY 69
01.		SIMULATION GAMES	Clarice Stoll Michael Inbar James Coleman	
0102	Sept. 1, 1967	Development of Curriculum Kits	Samuel Livingston Dove Toll	1.5
0104	Sept. 1, 1967	Workshops for School Personnel	Lindy Harry Dove Toll	1.5
0105	Sept. 1, 1967	Game Experience as a Basic Learning Variable	Michael Inbar Clarice Stoll	0.5
0108	Sept. 1, 1968	Role-Playing and the Development of Strategies in Game Situations	Clarice Stoll	0.5
0109	Sept. 1, 1968	Evaluation of Selected Games	Clarice Stoll Michael Inbar James Coleman	0.5
02.		EDUCATION AND SOCIAL CHANGE: THE DEVELOPMENT OF A SYSTEM OF SOCIAL ACCOUNTS	Peter Rossi James Coleman Zahava Blum	
0201	Sept. 1, 1967	Russell Sage Seminar on Social Accounts	Staff	0.1
0202	Sept. 1, 1967	Secondary Analyses of Negro Resources	James McPartland	0.2
0204	Sept. 1, 1968	Survey of Community Resources	Peter Rossi Richard Conviser	0.1

PROGRAM AND PROJECT REGISTER

Code Number	Date Initiated	Title	Investigator(s)	Professional Man-Years During FY 69
0205	Sept. 1, 1968	Survey of Intragenerational Changes of Negroes and Whites	Zahava Blum James Coleman James McPartland Peter Rossi	1.5
0206	Sept. 1, 1968	Computer Simulation of Intragenerational and Intergenerational Mobility	John T. Sprehe Nancy Karweit	0.1
03.		SOCIALIZATION, SOCIAL CLASS AND COGNITIVE STYLE	Doris Entwisle Ellen Greenberger Robert Hogan	
0303	Sept. 1, 1966	Comparison Between Rural and Urban Socialization of Language & Other Cognitive Skills (Especially Reading) With Emphasis on Changes in Community & Classroom Organization	Doris Entwisle	0.2
0304	Sept. 1, 1967	Ninth-Grade Survey of Selected Cognitive & Motivational Variables (Pilot Studies # 2, 3, 5, 6, 7, 8)	Ellen Greenberger Doris Entwisle	0.1
0305	Sept. 1, 1967	Instrument Development, Ages 5 to 7, Need Achievement and Curiosity	[redacted] Ellen Greenberger	0.2
0307	Sept. 1, 1967	Survey of Selected Cognitive and Motivational Variables Pilot Studies	[redacted] Ellen Greenberger	0.1

PROGRAM AND PROJECT REGISTER

Code Number	Date Initiated	Title	Investigator(s)	Professional Man-Years During FY 69
0308	Sept. 1, 1968	Development of a Curiosity Scale	Robert Hogan	0.1
0309	Sept. 1, 1968	Academic Achievement, Socialization and Birth Order	Robert Hogan	0.1
0310	Sept. 1, 1968	Incidence of Qualifiers in Oral & Written Productions of Blacks and Whites	Doris Entwisle	0.1
0311	Feb. 1, 1969	Changes in Organization Structure Designed to Have Positive Effects on Student Motivation	Ellen Greenberger Doris Entwisle	0.2
0312	Feb. 1, 1969	Cross-Cultural Survey of Teachers - USA & Norway	Doris Entwisle ELLEN GREENBERGER Gudmund Hernes	0.1
0313	Feb. 1, 1969	Factors Affecting the Development & Expression of Curiosity	Ellen Greenberger	0.1
0314	Feb. 1, 1969	An Evaluation of the Effects of the Hopkins Pilot Project for Disadvantaged Black High School Students	Robert Hogan Robert Horsfall	0.1
0315	Feb. 1, 1969	Long Term Effects of Children's Textbooks on Social Behavior	Robert Hogan Nancy Henley Ellen Legum	0.1
04.		A PROGRAM FOR THE STUDY OF STANDARD LANGUAGE ACQUISITION IN EDUCATIONALLY DISADVANTAGED CHILDREN	Catherine Garvey	
0401	Sept. 1, 1967	Linguistic Research	Edmund Anderson	1.0

PROGRAM AND PROJECT REGISTER

Code Number	Date Initiated	Title	Investigator(s)	Professional Man-Years During FY 69
0403	Sept. 1, 1968	Design and Development of Self Instructional Program In Standard English	Catherine Garvey Thelma Baldwin	2.0
0404	Sept. 1, 1968	Programming Research	Thelma Baldwin John Guthrie	0.6
0406	May 1, 1969	Development of a Communication Task to be Used in the Study of Socio-Linguistic Factors in Information Exchange	Thelma Baldwin	0.1
05.		THE POLITICS OF PUBLIC EDUCATION: A COMPARATIVE STUDY OF SCHOOL BOARD OPERATIONS	Robert Crain Peter Rossi	
0501	Sept. 1, 1968	Factors Affecting the Selection and Composition of School Boards	Robert Crain Peter Rossi	0.2
0502	Sept. 1, 1968	The Influence of School Board Composition on Decision-Making Processes	Robert Crain Peter Rossi	0.1
0503	Sept. 1, 1968	Relationships Between School Boards and the Community	Robert Crain Peter Rossi	0.3
12.		INDEPENDENT PROJECTS		
1203	Sept. 1, 1966	An Economic Analysis of "Equality of Educational Opportunity"	John Owen	0.3
1206	Sept. 1, 1967	Comparative Educational Organization Structures, Their Inputs and Outputs	David Livingstone	0.5
1207	Sept. 1, 1968	The Computer as a Responsive Educational Environment	Nancy Karweit James S. Coleman	0.5

PROGRAM AND PROJECT REGISTER

Code Number	Date Initiated	Title	Investigator(s)	Professional Man-Years During FY 69
1208	Feb. 1, 1969	Classroom Applications of Research in Expectation Theory	Murray Webster	0.4
1209	Sept. 1, 1968	Student Involvement in the Decision-Making Processes of Secondary Schools	Edward McDill James McPartland Colin Lacey	0.7
1210	Sept. 1, 1968	Influence Processes in the School	James Fennessey Mary S. McDill	0.2

DESCRIPTIVE OVERVIEW OF JOHNS HOPKINS R AND D CENTER

DESCRIPTIVE OVERVIEW OF JOHNS HOPKINS R AND D CENTER*

Introduction

The Johns Hopkins University Center for the Study of Social Organization of Schools and the Learning Process is the most recently established of the nine research and development centers funded by U S O E. It began operation on September 1, 1966.

The principal objectives and focus of the Hopkins Center may be summarized as follows:

> The Center is concerned with the influence both of schools' social and administrative organization and of the community on the learning process of students from diverse social, economic, and racial backgrounds. The problem area defined by the Center extends from education at the classroom level to education at the national level. Research is being conducted to uncover the pragmatic effects of schools' social organization on learning, as well as the mechanisms through which these effects take place. Studies are investigating various organizational and administrative arrangements in education including personnel policies, classroom organization, racial and socio-economic integration of schools, informal social structures among students and teachers, organizational patterns throughout the system, and the relations between levels of education. Other work of the Center focuses on linguistic and cognitive development itself, particularly those aspects of the learning process which are

---

* This section relies heavily on McDill, McPartland, and Sprehe (1968), pp. 152-155.

likely to be responsive to differing educational and social contexts. Center staff members are seeking to develop innovations in organization and curriculum and to disseminate their results among educational institutions. It is intended that most of the Center's activities result in policy recommendations and pedagogical innovations which will improve the education of socially disadvantaged children.

At the request of U S O E, the Center focused its attention and resources during the first year of operation primarily on basic research in the broad area of equality of educational opportunity, with a special emphasis on school desegregation and its effects on students of varying racial and ethnic backgrounds. This problem involves one of the six crucial areas listed by U S O E as being in need of more intensive basic research. Such a focus is consistent with the original broad problem towards which the Center is directing its resources--the relationship of the social organization of schools, both formal and informal, to the learning process. The patterned relationships among students and teachers of different racial backgrounds are clearly one crucial component of the social organization of schools. In its second year, the Center inaugurated four new programs of research and development, each comprised of a number of projects. One additional program was developed for initiation in September, 1968, the start of the Center's third year of operation.

The following sections of this report will briefly describe the original desegregation research conducted by the Hopkins Center and then discuss the accomplishments of the current programs of research and development. Several exploratory projects not yet organized into a unified program of activities are also outlined. These program and project descriptions serve as a measure of the Center's past success and as an indication of the nature of its future activities.

Research on School Desegregation and Educational Opportunity

Two critical considerations concerning school desegregation are (a) the extent to which cities attempting to cope with the administration of racial integration are confronted with hampering conditions, and (b) the identification of the nature of effects of school desegregation on Negro and white students. The Center initiated research on the administrative problems through a case study of the difficulties experienced in the achievement of school desegregation in one city, Baltimore, Maryland. The nature of segregation effects was examined in a study of a large sample of metropolitan northeastern students obtained from the Equality of Educational Opportunity survey (Coleman, *et al.*, 1966).

The study of school desegregation in Baltimore (Walker, Stinchcombe, and McDill, Center Report No. 3, June 1967) had the twofold aim of describing the history of racial composition of that city's schools for the eleven years since the Supreme Court school desegregation decision, and of searching for causes of the failure to implement the desegregation decision, where failure was encountered. Researchers made use of information on the racial composition of each school in the city, as well as schools in the surrounding county suburbs for the entire eleven-year period since 1954. Additional data from the U.S.

Census provided a picture of the racial character of, and the population migration patterns in the neighborhoods surrounding each school.

The study had the immediate outcome of providing a detailed statement of the difficulties faced by the Baltimore Metropolitan Area in making progress towards school desegregation. However, the research results were not limited to a picture of this particular city. The researchers confronted the problem of developing an index for the analysis of segregation that would reflect the migration patterns and demographic characteristics of the population areas served by the various schools. Existing segregation indices utilized in other studies were reviewed and found inadequate for the solution of this problem. Consequently, a new measure, the "replacement index," was developed and its relation to other widely used indices was demonstrated. This measure has been employed subsequently by other researchers of segregation patterns (e.g., Farley and Taeuber, 1968). A computer program and "analysis package" were also prepared for other school systems desiring to perform analyses for their systems similar to that for Baltimore.

In addition to the methodological by-products of the research, the substantive findings for Baltimore were widely publicized in the area, and have been used by some educators in developing future school plans and policies. This Center report also documented the reasons why the Baltimore Metropolitan Area has not been able to make significant progress over the years in school desegregation.

Until the completion in 1966 of the extensive Office of Education survey, Equality of Educational Opportunity, little information had been available for directly testing the effects on students of attending segregated and desegregated schools. Although the original Office of Education report did not emphasize the effects of desegregation, several staff members of the Hopkins Center had been involved with the survey prior to the establishment of the Center. Thus the Center was well prepared to carry out further analyses of these data since some of its personnel were already familiar with the character and design of that survey, and the data were available to them. Under a contract with the U.S. Commission on Civil Rights, further analyses of the survey data were performed by the Center staff and reported in the Commission's study, Racial Isolation in the Public Schools (1967). Other publications on desegregation effects originating from the Equality of Educational Opportunity research have been prepared by Center staff subsequently (McPartland, Center Reports Nos. 2 and 21, Nov. 1967 and June 1968, respectively).

A number of the findings from this research appear to have important policy implications. For example, the facilitative effects of desegregation on the achievement and attitudes of Negro students seem to be negated if they are placed in segregated classrooms in desegregated schools, or if they are socially segregated in the schools.

Although the Center has broadened its research focus since the first year of operation to include topics of more general scope than desegregation, research on various aspects of this topic and on the broader concept of equality of educational opportunity have continued, reflecting a sustained interest of staff members in this area. For example, a number of Center reports on educational policy and practice have been produced, papers which have dealt with the consequences and future implications of desegregation.* In addition, the Center program which was initiated in September, 1968, focuses on the operation of school boards; in particular, it deals with the conditions affecting school board decisions with regard to desegregation.

Current Research and Development Programs

In its current activities, the Johns Hopkins Center is organized around five major programs. Each program is composed of several research and/or development projects. Four of the programs have been underway since the start of the Center's second year of operation in September, 1967. The other one began in September, 1968. These five programs are as follows:

I. Simulation Games. The purpose of this program is to investigate and evaluate the influence of an educational innovation, simulation games. Using simulation games developed through earlier research at Johns Hopkins, the Center studies the ways in which this technique alters the learning environment and the manner in which students and teachers respond to experiences with simulation games. Dissemination activities involve both the specific games now available for classroom use, as well as the theory and experience with gaming as an instructional medium.

---

* See, e.g., Center Reports Nos. 11, 12, 13, 18, 25, 26, and 47 listed in Appendix A.

II. Education and Social Change for Negro Americans: The Development of a System of Social Accounts. The objectives of this program are to develop a conceptual framework for monitoring the relative assets and deficits of different groups in the nation; to develop an empirically validated theory of how deficits are converted into assets; and to determine the roles the educational institution can play in the conversion processes. Currently, this goal is being pursued primarily through a national survey which obtains retrospective information about the educational careers, military service, family migration, occupation and income histories of white and Negro Americans in order to analyze the major changes which have occurred in an individual's life, following age 14.

III. Socialization, Social Class and Cognitive Style. The purpose of this program is to examine the effects of several variations of social organization (social class, home, school) on the acquisition of motive and cognitive styles relevant to learning and academic performance. Projects include research and instrument development for those cognitive styles thought to be most susceptible to influence by changes in social organization of schools; studies of the development of word and language mastery; and investigations of the impact of particular variations of school organization on cognitive style.

IV. A Program for the Study of Standard Language Acquisition in Educationally Disadvantaged Children. The primary purpose of this program is to develop instructional techniques and approaches designed to provide disadvantaged children with a command of spoken standard English. Analysis of speech patterns of elementary students and the learning characteristics of this population guides the development of self-instructional materials for language acquisition. The staff is developing sequential instructional units for grades five and six.

V. The Politics of Public Education: A Comparative Study of School Board Operations. This program focuses on problems such as the interrelationships between the political characteristics of the city, the way in which school board members are selected, the way in which the schools are financed; and the schools' response to demands for improving the quality of Negro education. Data have been collected from political, governmental and school officials in 93 cities.

A sixth program encompasses a number of independent projects, each concerned with some aspect of the Center's major problem area. It is the intention that these projects will develop into future programs or feed into existing programs of the Center.

There are several ways in which the above programs combine to fulfill the Center's mission.

First, R & D Centers are intended to be a new source for improving American education because they bring together researchers from many disciplines to work over an extended period of time on aspects of a problem area in a way which has not existed before. The Hopkins Center has assembled such an interdisciplinary staff of professional researchers. The staffs of the Simulation Games Program and the Social Accounts Program are principally sociologists; the Cognitive Styles Program staff members are trained in psychology. The Program for Standard Language Acquisition is conducted by a staff of linguists and educational psychologists. In the Politics of Public Education Program there are researchers who have published widely in sociology and political science. The independent projects researchers are trained in economics and sociology of education. The remaining members of the regular Center staff are from Departments of Education.

Besides the regular interactions between Center staff members where the research and development activities of each Program are discussed (such as in the weekly Center Seminars which were instituted in September, 1967) there have been several direct links established among the programs. For example, there are joint projects conducted by the Games Program and the Linguistics Program, as well as by the Cognitive Styles Program and the Linguistics Program; very frequently researchers spend part of their time contributing to two different Center Programs or projects. Although the molding of an interdisciplinary team of researchers requires time for development, the ingredients are present in the Hopkins Center and considerable progress has been made to this end.

Secondly, the programs and projects underway at the Hopkins Center are designed to provide coverage of major aspects of the Center focus on the social organization of the schools and the learning process. The Social Accounts Program studies the organization of the national *educational institution* and has collected information in its national survey of life histories on the experiences and impact of educational careers at all levels, involving both full-time and part-time education. The Program on the Politics of Education is concerned with a comparative study of the governing mechanisms of public *school systems* in the country -- the public school boards -- and the conditions which affect their memberships and functions. The social organization at the *school* level is directly studied by the Center project investigating the decision-making processes in secondary schools, and by the projects in the Cognitive Styles Program concerned with organizational features involving teachers who work in teams in a "guidance-oriented approach." Other Center research at this level has been concerned with incentive systems within schools and aspects of tracking or streaming of students. The early research in the Center concerned with racial desegregation also considered differences between schools in social organization. Finally, in terms of the social organization of the *classroom*, several Center programs and projects are pertinent. The Simulation Games Program is studying the impact of an educational innovation which alters the allocation of classroom rewards and changes the traditional role of the teacher. The

Linguistics Program is developing an extensive curriculum unit based on self-instructional techniques which is in contrast to the traditional classroom organization. Projects in the Cognitive Style Program are considering organizational variations such as incentives for group as well as individual activity, and the co-operative preparation of classroom tests. Among the independent projects in the Center one is investigating the use of the computer as a responsive environment in instruction, and another is developing "expectation theory" to analyze relationships in the classroom.*

Thirdly, the Center Programs and projects are also organized to maintain a balance among research, development and dissemination activities. Two Center Programs -- Simulation Games and Linguistics -- because of their particular contents, have proceeded furthest in the direction of development. The Simulation Games Program, which builds on the work completed under grants from the Carnegie Corporation before this Center was founded, has a considerable repertoire of materials which are now being used in schools and which form one basis for the research activities of the Program. The Linguistics Program in the past year has completed first versions of several self-instructional units in standard English. These products have undergone some testing with school children and will be used in selected schools during the next year, along with additional instructional units which are being prepared. Other products developed by the Center include programs which use the computer as a responsive environment, a desegregation analysis package which can be used by school systems to analyze their progress in desegregation, as well as the research instruments which have been developed in connection with various Center activities.

---

* More intensive study of these aspects of social organization of schools at each level of aggregation, as well as experimentation with several specific organizational features of schools which have not yet been examined by any researchers, await the availability of sufficient resources at the Center. The most serious limitation to the Center's progress in achieving an early impact on the reorganization of schools for the more effective learning experiences of students is the halt in the growth of USOE resources devoted to the total R & D Centers Program, which affected this Center at a particularly critical point in its history.

The other programs and projects at this point in time involve mainly research efforts. It should be noted that two Programs have been in part concerned with the measurement and instrument development questions in connection with the learning process, the solution of which should be of great value to Center activities in other programs. The Cognitive Style Program devotes a considerable portion of its effort to investigating those aspects of a student's motivation and cognitive styles which appear to be amenable to influence from the social organizational properties of the learning environment. The Social Accounts Program has completed the instrument development and data collection activities for a national survey of many later life consequences of exposure to different educational experiences. In connection with its development activities, the Linguistics Program has studied the language acquisition of children from different social and cultural backgrounds, and, thus, similar to these other programs, has provided important knowledge about the learning process which is readily available to other Center Programs.

Dissemination activities involve the publication of reports from each of the programs and projects, which are available from the Center or the ERIC System. Workshops and conferences are held concerning Center products, and the auspices of the Maryland State Department of Education and Regional Laboratories are used in bringing Center products and research findings to the attention of school personnel. A major addition to these dissemination activities will be the institution in the next year of a professional journal, Simulation and Games, to be housed at the Center with the purpose of providing a central focus for activities throughout the nation in this area.

PROGRAM ACTIVITIES
AND
ACCOMPLISHMENTS

PROGRAM I: SIMULATION GAMES

Overview

The basic premise of this program is that greater student motivation for learning, an increase of intrinsic interest in certain topics, and greater acquisition of information and ideas can be brought about by modifying the reward structure of the classroom. One device for altering the allocation of classroom rewards is thought to be academic games. Games function as a learning device because they are intrinsically attractive to students and encourage a new kind of cooperation among them. Moreover, they shift emphasis in the teacher role away from maintaining control of the classroom and evaluating individual student performance, and move it in the direction of informal interaction, discussion, and coaching.

The games developed at Johns Hopkins are a combination of the game-like techniques which have long been used by teachers to arouse student interest and the relatively novel techniques of simulation. That is, the games are designed to mirror some social process or aspect of social interaction which the student is expected to appreciate in a more thorough way after his experience in playing the games. Simulation games, then, are not merely devices for motivating students to study further in the area after the play is over, but players learn from their very participation in the game.

To take one example, in *The Legislative* (or *Democracy*) *Game*, six to ten student players are each designated as legislators and the game requires them to act collectively as a legislative body. Each student receives a set of cards on which are printed the attitudes of his constituency regarding issues facing the legislature: "Federal aid to education - 70 persons against, 30 persons for. Retaining military base in your constituency - 250 persons for, 50 persons against." Playing the game involves short speeches, informal bargaining with other legislators, and formal sessions of the legislature under parliamentary rule. Players succeed by getting themselves re-elected at the end of the game which, in turn, is dependent on their success at passing or defeating issues according to the wishes of their constituencies. *The Legislative Game* involves seven additional levels of progressive complexity beyond the basic version described here. Research indicates the large majority of student players perceive that success in the game is a function of exchanging support or cooperating with other legislators. In other words, the fundamental principle behind the game's construction is effectively communicated in the playing of the game.

Since 1962, prior to the establishment of the Center, faculty researchers at Johns Hopkins supported by two Carnegie Corporation grants have been developing academic games which simulate social situations and conducting research on the processes which make simulation games an effective learning device. The establishment of the Hopkins Center initially brought about an expansion of all phases of the program. However, one phase of the program, game development itself, has been curtailed because of USOE copyright policy. Under the present copyright policy it is not feasible to have games developed under Center auspices published commercially. As a consequence, game development is being conducted within the University but outside the Center in order that this activity, which was flourishing prior to the Center's existence, not be impeded by it.

There are three major types of program activities discussed here: (1) Field-Testing and Curriculum Development, (2) Research of two types -- game evaluation and "basic", and (3) Dissemination.

Field-Testing and Curriculum Development

By the time the Center came into existence, researchers working on games at Johns Hopkins had developed and tested a variety of social simulation games suitable for high school social studies classes. Most of these games became the core group for research and dissemination activities. These games used in research and dissemination are described in Chart A.

A repertory of games, without ancillary materials and support, is not sufficient to guarantee its adoption as a curriculum innovation. Several additional components are needed. First, each game requires testing for feasibility and educational utility.

CHART A

SIMULATION GAMES DEVELOPED AT JOHNS HOPKINS

The Legislative (Democracy) Game

a composite of eight different games which simulate the legislative process; in the basic version players act as representatives, giving speeches and bargaining with other players. The object is to pass those issues which are most important to their constituents and thereby get re-elected.

6-11 players 30 minutes-4 hours Jr. High, Sr. High, Adults

Life Career

a simulation of certain features of the "labor market," the "educational market" and the "marriage market," as they now operate in the U.S. and as projections indicate they will operate in the future; the players work with a profile of a fictitious person, alloting his time and activities among school, studying, a job, family responsibilities and leisure time.

2-20 players 1-6 hours Jr. High, Sr. High

Trade and Develop

simulates the process by which nations develop their economies through a series of economic decisions. The purpose of the game is to give the players an intuitive understanding of this process and of certain fundamental concepts of economics.

6-10 players 30-45 minutes Upper Elementary, Jr. High, Sr. High

The Ghetto Game

simulates the pressures that the urban poor live under and the choices that face them as they seek to improve their life situation. It is a game of mobility in this particular socio-economic group.

6-10 players 1-4 hours Jr. High, Sr. High, Adults

CHART A (cont'd)

Consumer

a model of the consumer buying process involving players in the problems and economics of installment buying; consumers compete to maximize their utility points for specific purchases while minimizing their credit charges; the three different credit agents also compete to make the most satisfactory lending transactions.

11-34 players   2-6 hours   Jr. High, Sr. High, Adults

Economic System

a simulation of the interrelationships of a competitive economic system. Mine owners, manufacturers, workers and farmers market, produce and consume goods while trying to make a profit and maintain a high standard of living.

7-13 players   2-4 hours   Jr. High, Sr. High

Parent-Child

simulates the relationship between a parent and an adolescent in respect to five issues differentially important to both; parents compete against parents and children compete against children to develop the best strategies in their relationship.

4-10 players   ½-1 hour   Jr. High, Sr. High

Disaster

a simulation of a community hit by a localized natural disaster; each player tries to dispel his personal anxiety for family members who may be within the stricken area, while at the same time tries to operate his community post which is vital to the community's well-functioning and eventual overcoming of disaster.

6-16 players   2-6 hours   Sr. High, Adults

Secondly, there is the requirement of curriculum aids, taking into account field experiences with the game. Thirdly, teachers prefer curriculum guidance and support activities to accompany the game.

Field-testing requires the administration of a game in a variety of settings with a wide range of subjects. The field-worker looks first for technical problems with a game's organization and procedures. Once the game is fully playable, informal tests are made concerning its educational potential. Through interviews and questionnaires the field-worker explores whether the basic objectives of the game are being accomplished. At the next stage the game is administered by teachers in order to identify remaining problems in the practical aspects of the game and to obtain their evaluations. For some of the Hopkins games it was possible to produce sufficient experimental copies for use by schools at request.

The work on Ghetto is a useful example of the effort invested in and results produced by field-work. The game was field-tested in twenty-one settings, involving private school and inner-city students, rural youth, school teachers, graduate students, and community leaders from inner-city neighborhoods -- a total of more than 850 subjects. There were many other game sessions played in less formal settings or administered by other staff members. At the same time, the designer developed an annotated book and film listing, and a list of supporting activities. Two reports of these activities (Toll, 1969a, 1969b) present a brief overview of the field-work activities.

The second phase of curriculum development is the preparation of teachers' curriculum aids. Each set of materials contains the following:

(1) a brief overview of the game; (2) what the game teaches; (3) a detailed explanation of the model and rationale of the game; (4) how to prepare for and introduce the game to new players; and (5) a guide for group discussion during and after the game sessions. Decisions regarding the content of the materials is based, to a considerable extent, on the field test of the game.

On the basis of research, suggestions are also made on how to use the game in its fullest educational potential. For example, the size of the group has been related to degree of learning in Community Response (Inbar, 1968). This finding has led to a statement in the manual concerning the optimum size for the game group. A repeated implication from research (Boocock et al., 1967 and Stoll, 1968) is that games should be played more than once, and preferably be accompanied by extensive discussion. Thus "basic" research results yield conclusions which have practical applications.

Beyond the curriculum aids, it had been hoped ultimately that extensive curriculum kits would be prepared for each game in the repertoire. These kits ordinarily would contain a day-to-day classroom guide covering a curriculum unit of several weeks, as well as the special readings and work materials to be used in this unit. During the past year a curriculum kit for The Legislative Game has been developed. This sequence of activities is presented in Chart B.

The Legislative Game curriculum kit was field tested in twelfth grade classes in Social Problems in a Baltimore high school during 1968-69. On the basis of these trials, several of the materials and lesson plans have been revised, and *The Legislative Game* unit will be incorporated at this school as part of the social studies curriculum during the 1969-70 academic year.

CHART B

OUTLINE OF DEMOCRACY CURRICULUM

The development of a two-week unit on the U.S. Congress or Congressional Processes, incorporating four levels of the Hopkins DEMOCRACY game, suitable for use in a civics, U.S. history, or Principles of Democracy Course. The sequence of activities is as follows:

Day 1. DEMOCRACY Level 1: basic version

Day 2. Class discussion of Level 1 experience, and general game strategies

Introduction to parliamentary procedure

Day 3. DEMOCRACY Level 2: addition of simplified parliamentary procedures

Day 4. Short discussion of Level 2 experiences. Students divided into small teams for research and preparation of reports on game issues (using issue study booklets, included in game kit)

Day 5. Students give reports on issues

Day 6. DEMOCRACY Level 3: addition of congressmen's personal convictions

Day 7. Short discussion of Level 3 experiences

Study committee systems (readings or film)

Day 8. DEMOCRACY Level 4: addition of congressional committees and budgeting constraints

Chairmen explain rules

Members state own convictions

Members prepare worksheets

Begin committee meetings if time permits

Day 9. Complete DEMOCRACY Level 4

Committee meetings

Congress in session

CHART B (cont'd)

Day 10. Test

Discussion on ways to improve simulation

Discussion on student's feelings about the political role (would you like to be a congressman?)

Readings from J. F. Kennedy's Profiles in Courage

It became clear through the enormous amount of effort required for this task that the Games Program, with its small staff, limited resources, and other commitments, could not prepare such extensive units for other games. Rather, curriculum materials for the remaining games will be limited to bibliography, suggested activities, sample tests, and discussion topics.

Research

Game Evaluation.

One major thrust of research has been to address the question: What, if anything, do games teach, and under what circumstances?* The investigations of this question to date have been primarily exploratory, with a variety of research designs utilized. Typically, the studies have taken place in regular classroom settings with games administered by regular teachers. Some studies have used comparison groups--either students receiving a standard curriculum unit covering the game topic or students playing a different simulation game. "Learning" has, until recently, been measured by simple paper-pencil tests similar to those used in school.* A second measure of "learning" has been behavior in the game itself; namely, whether students eventually used the "best strategy".

---

* A selected bibliography of research on games conducted by researchers connected with the Games Program appears at the end of this section.

Chart C lists the published studies, the games studies, the basic design, and typical findings. Considering all the studies together, certain tentative conclusions can be drawn, although more systematic research is needed.

A striking finding is that the relationship between learning in a game situation and performance in the conventional school setting is very weak. Presumably games involve a different mode of learning than that which occurs through traditional methods. An important implication is that many "unsuccessful" students can learn in game settings.

Secondly, games are apparently equivalent to traditional classroom procedures with regard to simple content learning. Furthermore, games likely teach certain kinds of knowledge that are not conveyed through conventional methods. Games probably are better with regard to teaching social processes. Thus, students who play Parent-Child learn about the dynamics of parental power and child obedience. In addition, games are

---

* An important outcome from the early investigations was the realization that the measures of learning were not very reliable or valid. Usually only content learning of a general nature was measured. The planned studies will utilize very different kinds of measures that more accurately tap the player's understanding of the dynamic model implicit in the game and his ability to make decisions on the basis of this knowledge.

CHART C

SUMMARY OF GAME EVALUATION STUDIES: REFERENCE, DESIGN, AND TYPICAL RESULTS

Boocock (1968):	1,200 teenagers randomly assigned to either *Life Career* or *The Legislative Game*. Pre- and Posttests. 1. Game play does not necessarily result in simple vicarious experience. 2. Games produce factual learning. 3. Games result in increased sense of efficacy.
Schild (1968):	Four samples of players of *Parent-Child* with focus on game strategies. 1. Strategies become increasingly rational each round. 2. Players learn to select those strategies that are rewarded with success in the game.
Inbar (1968):	Twenty-three game groups of *Disaster* given before-after questionnaires. 1. Learning in the game results from group processes, rather than individual learning. 2. In "overcrowded groups" players learn less. 3. Willingness to participate in the game is important for producing learning.
Zaltman (1968):	Adult and teenage games of *Consumer*. Pre- and Post-tests, plus analysis of game behavior. 1. Learning in the game is mediated by the extent of player participation.

CHART C (cont'd)

Boocock, *et al.*, (1967):	Social studies classes at three schools assigned to *Life Career*, *The Legislative Game* or conventional curriculum on these topics. Solomon Four-group Design. 1. Games and traditional techniques produce similar learning. 2. Games induce change in self-attitudes where traditional techniques do not. 3. Games are not related to increased sense of efficacy.
Stoll (1968); Stoll and McFarlane (1969):	Seven classes of *Parent-Child*. Analysis of strategies. Pretest. 1. Learning of strategy is related to player characteristics. Some mixes of players inhibit learning. 2. Pre-game attitudes become less relevant for learning as the game progresses.
Cohen (1969):	Children in enrichment program assigned to *Consumer*, *The Legislative Game* or no-game. Posttests. 1. Students prefer games to conventional classroom learning.
Anderson (in preparation):	Classes assigned to *Consumer* or regular economics curriculum. Pretests and Posttests. 1. Game and conventional curriculum produce comparable learning of facts. 2. Game players were more skillful than controls in consumer decision-making.
Stoll (in preparation):	Same design as Anderson. 1. Game learning is affected by the game group and its processes. 2. Game learning is not related to academic achievement. 3. Game players did not exhibit value changes about credit, while controls did.

probably better at imparting decision-making skills. For example, students who played Consumer performed better in a simulated problem concerning car-financing than their colleagues who participated in the regular consumer economics sequence. (Both groups did equally well in factual learning.)

In addition, games may increase a player's sense of efficacy in that they provide him with the opportunity to make decisions partly under his own control. The studies to date do not consistently support the hypothesis, but it is still possible that exposure to the simulation technique over time could induce this attitude change. (There is impressive evidence that a sense of efficacy is an important psychological basis for learning.) Also worth pursuing is the possibility that game participation, again preferably over a protracted period of time, has other favorable effects on self-concept.

Recognizing that games do have various effects upon the players, a second line of research has addressed the conditions under which maximal learning occurs. These studies have immediate practical implications for the use of games in classrooms.

Several studies have shown that there is a large variation in the amount of learning that occurs when one looks at the games by group. By identifying why some groups induce more learning than others, it should be possible to develop methods of game administration that will ensure maximal learning.

One problem with some games is that the groups may be composed too large. The result is that rules are harder to learn, individual players become confused, and more problems arise during game play.

More subtle to understand is the way player characteristics and experience interfere with game learning. For example, in Parent-Child, which is a cooperation game, teams of males do not learn as quickly, perhaps because masculinity in our society requires competitiveness. Similarly, the selection of leaders for the Consumer game is important for determining the total amount of game activity, and, hence, learning.

A notable negative finding is that player attitudes toward the game subject are not too important in the end with regard to learning. There is evidence that initial interest and willingness to play the game on the part of players help games get off to a good start, so learning takes place more rapidly. One implication of this finding is that game administrators should present the game in a positive way to students.

One obvious source of influence upon the game has not yet been studied -- the game administrator. Clearly, the attitudes and training of the teacher are important for the success of the game session. One such study has been planned, with the focus upon teacher receptiveness toward innovations and her use of the games in the classroom.

There are many other hypotheses concerning the likely effectiveness of games which have yet to receive more than casual support. These include the following:

(1) The teacher's role is changed from evaluator to coach.

(2) Games change the sociometric structure of the classroom, tending toward democratization.

(3) Games change student perception of the teacher.

These hypotheses are important because they concern classroom organization, both among students, and between teacher and students. Hopefully, these effects can be studied in the near future.

It is noteworthy that the Games staff do not merely direct their own investigations. In addition, staff attempt to advise graduate students and other investigators who use the games for research purposes. To date, three Ph.D. dissertations and two Masters' papers prepared on simulation games have involved close cooperation with the staff. Currently, seven Ph.D. candidates from all over the country are in close communication with the program. These studies have several advantages: (1) They use types of subject populations not available to the Games Program; (2) they are designed and administered by individuals less directly committed to gaming; (3) they provide novel approaches to research with games. As a result, the Games Program has become an informal clearing-house on research.

Basic Research: Game Experience as a Basic Learning Variable.

As important as the development and dissemination of game materials, is a continuous addition to the knowledge about games *per se* and their impact upon learning.

An examination of the literature on play and games indicates that not only are games a universal means of enjoyment and relaxation from the pressures of "real life" concerns and activities, but also by engaging in various games, children in most societies learn the expectations, role strategies, and rules of fairness which are predominant in their social environment.* Understanding how natural games mediate learning is therefore of major importance for properly using educational games.

The research project under discussion was designed around this aim. More specifically it has five objectives:

(1) clarifying which socialization variables are related to game experience and which are not;

(2) investigating which games are substitutes for mediating which types of learning;

(3) partitioning out the effect due to the structure of the games from that attributable to the social characteristics of the groups who play games;

---

* See, e.g., Inbar (1969a)

(4) building an incipient typology of games according to their socializing impact;

(5) establishing the causal relationship between game experience and socialization outcomes by field experiments.

The research, conceived as a cross-cultural study involving Israel and the U. S., began on January 1, 1968. The preliminary stage, which lasted from January, 1968, to June, 1968, was carried out in Israel and involved three main steps: (1) assembling a research staff; (2) establishing contacts with school authorities and obtaining official clearances for data collection; and (3) drafting of data collection instruments, including the development or adaptation of tests to measure such socialization variables as creativity, span of attention, competitiveness, self-image, need-achievement, and inter-personal skills.

During the past year the study has further progressed through the following stages:

A. Israel

(1) Pre-test (July-December 1968)

a. Completion of the data-collection instruments

a. Collection of data in three schools

c. Coding of the data and transfer to I.B.M. cards

d. Preliminary analysis

(2) Study-Main Phase (January-June 1969)

  a. Extensive modification of the data-collection instruments in the light of the experience gained in the pre-test

  b. Drawing of a representative sample of Jewish-attended schools (18 institutions)

(3) Training of the enlarged field research staff

(4) Collection of data

B. U.S.A.

(1) Pre-test (July-December 1968)

  a. Collection of data in a Maryland, rural, racially, integrated school

  b. Analysis of data

  c. Write-up of preliminary results, leading to three working papers read, or accepted for future presentation, at professional meetings

(2) Study-Main Phase (January-June 1969)

  a. Revision and completion of the U.S. parallel version of the data-collection instruments

  Testing of the instruments in a Baltimore school

To sum up, as of June, 1969, all the data pertaining to the Israeli part of the cross-cultural study has been collected (N=2,500). The parallel English questionnaires are ready and tested. In the coming year the study will be completed in the U.S. and analysis of the data collected in the main study will start, while that collected in the pre-tests will be continued.

Dissemination

The dissemination activities of the Simulation Games Program include answering mail and phone requests for information (letter requests alone average now 40 per week), conducting demonstrations and workshops for school systems and other interested groups, and participating in major educational conferences.

The following "demonstration-type" activities were completed for educators and researchers during the reporting period.

Type of activity:	Demonstrations	Workshops	Consultations
Frequency of activity:	29	5	25

In addition to demonstrations, workshops and consultations, several other less direct methods of dissemination have been initiated. One product is a film, entitled "Alternatives to Tradition", which depicts the philosophy, development, and play of Life Career. The film, completed in 1968, was produced and directed by the undergraduate film club at Johns Hopkins. Rental copies are available for interested groups.

2

Another recent dissemination activity is the origination of a new professional social science journal, Simulation and Games. Published by Sage Publications, the first issue will appear in January, 1970. The journal will provide a forum for theoretical and methodological issues in simulation, basic research applications, and pedagogic applications. Thus, the major developments in simulation and gaming can be centralized through this publication. The journal will also provide critical reviews of simulation games. Whereas workshops reach educators, the journal should help stimulate professional interest in the technique.

Although the first issue of Simulation and Games is not yet in print, the Editor-in-Chief, Michael Inbar, and the Managing Editor, Clarice S. Stoll, have recently edited a special issue of American Behavioral Scientist devoted to "Social Simulation." Two previous issues of the same journal (October-November 1967) were edited by staff members under the title "Simulation Games and Learning Behavior." These two issues were modified and expanded into the first book on games in education -- Simulation Games in Learning -- edited by Sarane S. Boocock and Erling O. Schild (1968).

Finally, the program has cooperated with mass media representatives who desired to inform the general public on simulation gaming. In 1967, two special telecasts on new learning techniques devoted substantial portions of their programs to the games developed by the Hopkins researchers. Also, a variety of popular magazines (e.g. Saturday Review and Reader's Digest) have described the project in special articles. Through these sources of information the public has become acquainted with the innovation.

SELECTED BIBLIOGRAPHY OF WORKS
BY MEMBERS OF SIMULATION GAMES PROGRAM

Anderson, Raymond, *Consumer Experimental Evaluation*. forthcoming Center Report.

Boocock, Sarane S., "The Life Career Game," *Personnel and Guidance Journal*, (December 1967), pp. 328-334.

Boocock, Sarane S., and James S. Coleman, "Games with Simulated Environments in Learning," *Sociology of Education*, (Summer 1966), pp. 215-236.

Boocock, Sarane S., E. O. Schild, and Clarice S. Stoll, *Simulation Games and Control Beliefs*. Report No. 8, Center for the Study of the Social Organization of Schools and the Learning Process, The Johns Hopkins University, November, 1967.

Boocock, Sarane S., and E. O. Schild (eds.), *Simulation Games in Learning*. Beverly Hills: Sage Publications Inc., 1968.

Boocock, Sarane S., "Instructional Games," in *Encyclopedia of Education*. New York: Macmillan Company, (forthcoming).

Boocock, Sarane S., "An Experimental Study of the Learning Effects of Two Games with Simulated Environments," pp. 107-134 in Boocock and Schild, 1968.

Cohen, Karen C., *The Effects of Two Simulation Games on the Opinions and Attitudes of Selected Sixth, Seventh, and Eighth Grade Students*. Report No. 42, Center for the Study of the Social Organization of Schools and the Learning Process, The Johns Hopkins University, May, 1969.

Coleman, James S., "Learning through Games," *National Education Association Journal*, 56 (January 1967), pp. 59-70.

Coleman, James S., Sarane S. Boocock, and E. O. Schild (eds.), Special issues of *American Behavioral Scientist* devoted to "Simulation Games and Learning Behavior," (October and November 1966).

Coleman, James S., "Games -- New Tools for Learning," *Scholastic Teacher*, 15 (November 1967), p. 9.

Coleman, James S., *Games as Vehicles for Social Theory*. Report No. 22, Center for the Study of the Social Organization of Schools and the Learning Process, The Johns Hopkins University, May, 1968. Also in *American Behavioral Scientist*, (July-August 1969).

Harry, Lindy, *Using Simulation Games in the Classroom*. Report No. 44, Center for the Study of the Social Organization of Schools and the Learning Process, The Johns Hopkins University, June, 1969.

Inbar, Michael, "Individual and Group Effects on Enjoyment and Learning in a Game Simulating a Community Disaster," pp. 169-190 in Boocock and Schild, 1968.

Inbar, Michael, "Toward a Sociology of Autotelic Behavior," *La Critica Sociologica*, (in press), (1969a).

Inbar, Michael, "Development and Educational use of Simulations: An example -- *The Community Response Game*," *International Journal of Experimental Educational Research*, VI (1969b), pp. 3-42.

Inbar, Michael, "Participating in a Simulation Game," *Journal of Applied Behavioral Science*, (in press), (1969c).

Inbar, Michael, and Clarice S. Stoll, *Autotelic Behavior in Socialization*. Report No. 29, Center for the Study of the Social Organization of Schools and the Learning Process, The Johns Hopkins University, December, 1968.

Schild, E. O., "The Shaping of Strategies," pp. 143-154 in Boocock and Schild, 1968.

Stoll, Clarice S., *Player Characteristics and Strategy in a Parent-Child Simulation Game*. Report No. 23, Center for the Study of the Social Organization of Schools and the Learning Process, The Johns Hopkins University, July, 1968.

Stoll, Clarice S., and Sarane S. Boocock, "Simulation Games for the Social Studies," *Audiovisual Instruction*, (October 1968), pp. 840-842.

Stoll, Clarice S., Michael Inbar, and James Fennessey, *Game Experience and Socialization: An Exploratory Study of Sex Differences*. Report No. 30, Center for the Study of the Social Organization of Schools and the Learning Process, The Johns Hopkins University, December, 1968.

Stoll, Clarice S., Michael Inbar, and James Fennessey, *Game Experience and Socialization: An Exploratory Study of Race Differences*. Report No. 31, Center for the Study of the Social Organization of Schools and the Learning Process, The Johns Hopkins University, December, 1968.

Stoll, Clarice S., and Paul McFarlane, "Player Characteristics and Interaction in a Parent-Child Simulation Game," Sociometry, (September 1969).

Stoll, Clarice S., and Michael Inbar (eds.), Special issue of American Behavioral Scientist devoted to "Social Simulation," (July-August 1969).

Toll, Dove, "Observations of Reactions to the Simulation, Ghetto," (mimeo.) 1969a.

Toll, Dove, "Administrator's Manual for Ghetto," 1969b.

Zaltman, Gerald, "Degree of Participation and Learning in a Consumer Economics Game," pp. 205-216 in Boocock and Schild, 1968.

PROGRAM II: EDUCATION AND SOCIAL CHANGE: THE DEVELOPMENT OF A SYSTEM OF SOCIAL ACCOUNTS

Overview

To achieve the goal of "equality of opportunity" and socio-economic well being in American society there is the need to know what type of directed social change is appropriate. The purpose of this program is to examine empirical data on how social groups and individual households achieve social mobility in order to identify alternative intervention points. Social mobility is seen primarily in socio-economic terms (occupation and income) with a strong, but not exclusive, emphasis on the role played by educational attainments in the mobility of individual households and social groups.

The long range goal here is to formulate a strategy of directed social change leading to a larger measure of equality of opportunity for Negroes and other disadvantaged social groups. A basic assumption in the work is that the American educational system can play a critical role in such a strategy.

To formulate a strategy of social change based upon a working model of social mobility is part of the answer of knowing how to achieve socially desired social changes. It is also necessary to monitor constantly how such a strategy of social intervention is, in fact, succeeding (or failing). Hence, the conception of a system of "social accounts" designed to provide continuous measurement of ongoing social changes based upon the working model of mobility itself. The need for such a system of social accounts has come to be more and more recognized in recent years, although there is yet to be solid agreement of what form such a system ought to take.

This program is based upon a formulation of social accounts set forth by James S. Coleman (Center Report #1, September, 1967) who suggests that such a system should be conceptualized in terms of a set of balance sheets listing both deficits and assets of major subgroups within the American population. Such a listing would enable the study of changes over time and an assessment of the ways in which deficits are converted into assets as the result of alternative social policies. Even the most sophisticated of formulations does not contain a definitive exposition of the precisely critical variables to be measured in such a system; that is, the essential set of social indicators.

It is generally agreed that the measurement of the basic indicators of socio-economic status -- education, occupation and income -- is fundamental to an understanding of the state of a society. Beyond these can be added indicators from a variety of areas of individuals' lives depending on the particular causal model of social well being that is suggested. Thus, emphasis might be given to socialization patterns, residential or geographical mobility, marital history, political participation, consumer patterns, leisure behavior, etc. Needless to say, disagreement can even arise about the operationalization of the indicators after a specific set is agreed upon.

Without resolving the question of what it is that such a system should measure, it should be emphasized that the sheer collection of data without some postulation of causal relationships is clearly insignificant. One can take a number of research approaches to the general direction of causality without implying that they are mutually exclusive. Emphasis can be placed on socio-economic well being by studying the ways in which mobility and change are intergenerational processes. The research implications of this approach lead to a design which studies the transmission of social status between parents and children as the central problem. In studies of intergenerational mobility one would be especially concerned with the ways in which membership in a household of given characteristics influences one's own educational and occupational attainment and "life style." Equally important would be the comparison of individuals of similar background but whose current attainments are different, with an aim at understanding what historical circumstances subgroups were subjected to as to make "a difference."

Secondly, emphasis can be placed on individual or household socio-economic well being by carefully investigating the occurrence (or lack of occurrence) of certain events as the individual passes through his own life cycle. From a research perspective, this approach leads to a design which looks at events sequentially in individual histories. The interrelationships between events such as educational history and subsequent occupational attainment become foci of study. In current terminology, such research falls into the rubric of studies known as intragenerational mobility.

It should be noted that the main distinction between intergenerational and intragenerational studies is mainly a matter of emphasis on one or another part of the life cycle of individuals. The former is primarily concerned with family of orientation aspects and the latter with post-adolescence and career events.

Thirdly, one can look at individuals and households from the perspective of the spatial and temporal location in which they are found and study the impact of the environment (both location and history) on their socio-economic well being. While it is often argued, and possibly demonstrable, that individuals born in different historical periods have different "opportunities," the precise effects of location have not been carefully researched. There is some research, however, to illustrate the relationship between location and labor market opportunities.

Assuming that reasonably firm evidence on a set of causal relationships in all of the above approaches were to be found in the empirical studies of this program, a final task would be to project their implications into the future. The staff looks to computer simulation models to be used not only as a projection of present conditions but also for the testing of the consequences of alternative policy programs. The effects of alternative policy programs on desired states of well being could be shown through such models. Decision makers would then be able to choose that set of policy alternatives which would be most likely to achieve stated socio-economic well being objectives.

Previous researches into social mobility have uniformly given heavy weights to educational experiences in the explanation of the phenomena under study. In modern industrial societies (and in some of the developing societies as well) educational attainment is a main route to social mobility. The evidence on this point is so overwhelming that no further justification is needed for the heavy concern in this program for educational experiences.

For convenience, the general program has been divided into a set of separate projects, as indicated below. They are set up around distinctly different data collection or model building efforts.

Although each project may be considered a somewhat independent effort, each is expected to make its major contribution to the central goal of the program: the construction of a theoretical model of mobility processes in American society.

The first year of the Program, 1967-68, was spent in theoretical and research excursions into all the different areas discussed above. A number of pilot studies were conducted in the areas of inter- and intra-generational mobility; further thought was given to community factors in mobility; some headway was made in the programming necessary for computer simulation, etc. At the end of that year, the Program staff reached the conclusion that firm knowledge of the processes which "make a difference" in the lives of individuals and sub-groups in American society is insufficient to warrant an all out effort in every direction. Nor were sufficient research funds available for an expanded program. Consequently, the staff chose to concentrate in a few of the many directions in which future work could have been undertaken.

Staff deliberations led to the decision to de-emphasize temporarily projects dealing with inter-generational mobility, "community" influences on social mobility and change, and computer simulation of mobility processes. As a result of this decision, the Program's major activity during the reporting period was centered around a national survey of intra-generational mobility.

Although much of the ground work for such a survey had been completed in the previous year, the demands of the field work and preparation of the resultant data occupied most of the staff's efforts during the current year. Although the Program has not completed any reports or publications from its major project, it has proven the feasibility of a specific type of data collection (i.e., retrospective life histories) and it has overcome the majority of the data processing difficulties which are inherent in the analysis of such data. The staff now has ready for quantitative analysis the most complete set of career histories of adult males ever available. Furthermore, these data permit comparisons to be made between whites and Negroes in greater detail than is usual in any but the largest national surveys.

Russell Sage Seminar on Social Accounts

The seminar was established in cooperation with the Russell Sage Foundation for the purpose of providing researchers from a number of institutions with the opportunity for exchange of information, research plans, and research findings in the general area of social change and social accounting. The structure of the seminar consisted of formal presentations of papers followed by a discussion of the work and its implications for social accounting.

During the 1967-68 academic year, the seminar devoted its monthly meetings to the presentation of papers on general approaches to the study of social change. Although the papers provided a good general orientation to alternative approaches to the study of social change, participants felt that a narrower focus would be more fruitful for the next year (1968-1969).

During the 1968-69 academic year, the major focus of the seminar was on Models and Measurement of Social Change. James S.

Coleman of the Hopkins R and D Center presented a theoretical paper on individual development and the transformation of resources; Zvi Griliches, University of Chicago, discussed the role of education in production functions and growth accounting; Karl Taeuber, University of Wisconsin, focused on white-Negro occupational differentials and the role of migration in changing occupational structures; Norman Ryder, University of Wisconsin, was primarily concerned with demographic changes in the population with emphasis on the implications of population increase. Robert W. Hodge, University of Chicago, presented a discussion of occupational mobility using synthetic cohorts of migrants and non-migrants as an analytic unit. J. Timothy Sprehe reported progress on the computer simulation of intra-generational and inter-generational mobility project underway at Florida State University. Irma Adelman, Northwestern University, discussed systems analysis of investment in education for economic development and social and political modernization; Daniel Bell presented a preliminary typology of a variety of theories and approaches to the study of change in an effort to identify which theories are relevant for what kinds of phenomena. Theodore Gordon, Institute for the Future, presented the results of initial experiments with the cross impact matrix method of forecasting. One session of the seminar was devoted to a critique of the HEW effort at social accounting, Toward a Social Report. In this discussion, the regular participants were joined by Mancur Olson, Deputy Assistant for Social Indicators, Department of Health, Education and Welfare. The final session of the seminar was devoted to a presentation by Peter H. Rossi and Zahava D. Blum of the Hopkins R and D Center on preliminary findings from the Life History Survey to be discussed below.

Secondary Analysis of Negro Resources

Consistent with the original objectives of the program, data were assembled for secondary analysis of later-life consequences of different educational experiences. Towards this end, the program had access to survey data from the Equality of Educational Opportunity study, tapes from the 1960 U. S. Census of Population, and tapes from a number of surveys conducted by researchers at other universities.

The Center Report No. 27, Some Hypothetical Experiments On Variations in School Components and Selected Educational Outcomes (McPartland and Sprehe, Oct. 1968), is the final report of this project. The exercise described in this report is a continuation of earlier work in the Social Accounts Program since it is an empirical implementation of the model for analyzing the conversion of individuals' assets and deficits outlined earlier.* The analysis focuses on the public educational system as the institution which may act to transform the individuals' resources.

---

* James S. Coleman, Race Relations and Social Change. Report No. 1, Center for the Study of the Social Organization of Schools and the Learning Process, The Johns Hopkins University, September, 1967.

Three different measures of personal assets and deficits which are transformed by schools were investigated: the student's level of performance on a standardized verbal achievement test, the probability that an individual will fail the Armed Forces Qualifying Test, and the probability that an individual will not continue his education to college. In this investigation, three different components of schools were examined for their differential impact in the transformation process: school facilities and programs, school teaching staffs, and characteristics of the fellow students in the school.

The analysis involved a comparison of the racial and regional disparities in these three school components for their effects on the three personal resources of individual students. The technique was to obtain the expected values of personal resources of selected groups of students when they were assigned the school attributes of some other group. For example, the personal resources of northern Negro students with their own school characteristics were compared to their resources when they were assigned the school characteristics of northern white students, or of southern white students or of southern Negro students.

Besides giving an empirical example of one model of the conversion processes considered by the Social Accounts Program, the results of this investigation are discussed in terms of the sources of inequality of educational opportunity.

This project has also obtained a sub-sample from the Social Security Administration's Continuous Work History Tape under a special arrangement with the RAND Corporation and SSA. However, since the objectives of this analysis will be distinct and the staffing slightly different, a separate project is being organized for FY70.

Field Survey of Intergenerational Changes for Negroes and Whites

The original goal of this project was to specify how the educational system influences occupational changes across generations for Negroes and whites in this country. Towards meeting this objective, a national survey of Negro and white adults was planned. The intent was to obtain, from a single interview, information on three generations (the respondent, respondent's parents, and respondent's children).

Although adequate up-to-date and well-analyzed national studies of intergenerational mobility exist (Blau and Duncan, 1967; Duncan, Featherman, and Duncan, 1968) the intent was to extend knowledge in this area through the design of a survey covering three generations and both paternal and maternal family line influences on mobility.

Under contract with Audits and Surveys, Inc., an interview schedule was designed and a pretest was conducted with 100 households. This sample was half Negro, half white, half over forty years of age, and half under forty. The pilot survey revealed that the instrument did not accomplish its objectives, especially with older Negro respondents. As a result of the pilot survey this project was suspended for the remainder of the current year.

Research along this line will have to be conducted using techniques which are quite costly (i.e., both husbands and wives in households will have to be interviewed). Given the present budgetary limitations, the staff has decided to postpone moving in this direction beyond at least FY70.

Survey of Community Resources

The original objective of this project was to conduct a survey to measure certain community attributes which facilitate the conversion of deficits held by individuals in a locality into assets. In addition to emphasis on social institutions within a community, special attention was to be placed on defining and operationalizing the concepts of community cohesion and community trust as discussed in Center Report #1 (Coleman, 1967).

Progress on this project has been primarily in the nature of theoretical work prerequisite to the development of a research design. One staff member is completing a report which attempts to define the concept of "trust," states the relationship among people's preferences, their control over activities, and the extent of interpersonal trust in quantitative terms. The work will appear in the form of a Center Report during the current fiscal year.

Another staff member is completing a review of previous theoretical and empirical work concerned with the implications of "community" in the social mobility process. The results of this review have led to a typology of definitions of the term "community" as well as some initial operationalization of the concept for empirical research. It is anticipated that this work will also appear as a Center Report during the current fiscal year.

Plans for a survey of community resources have been suspended for the remainder of the fiscal year. However, as part of the analysis of data collected in the intragenerational survey described below, specific attention will be given to gross measures of community resources in an effort to determine linkages between structural and individual variables. For example, data available on the quality of schools which respondents attended, labor market variables, demographic characteristics, and other aggregate measures will be merged with the individual records.

Survey of Intragenerational Changes of Negroes and Whites

From its inception, the program has planned to undertake a survey to study the interrelationships of events occurring within an individual's life cycle. Events to be examined included levels and patterns of educational attainment, military service, family formation and dissolution, migration and residential shifts, and occupational and income changes. The survey was to obtain retrospective information on these and other events from Negro and white adults.

During the first year of the program, several different forms of survey instruments were prepared for a pilot study. Through a subcontract with Audits and Surveys, Inc., a pretest was conducted on both urban and rural Negro subsamples. Analysis of these questionnaires demonstrated the general feasibility of the retrospective approach to the collection of life history data. Consequently, it was decided to make the project on the survey of intragenerational changes the major emphasis of this program for the past year.

The decision combined with the interest in researching "equality of opportunity" led the staff to emphasize racial differences in intragenerational processes. Consequently, a study was designed which would allow comparisons between blacks and whites in the United States. Preliminary discussions suggested that the analytic interests could best be served by interview data from a national sample of approximately equal numbers of blacks and whites. Within each race, men between the ages of 30 and 39 were to be included in the national samples. The majority of respondents within this age group had entered the labor force following World War II; they had also completed their education and had some labor force experience, both of which are central variables for the studies planned.

Within this general framework, the three major accomplishments in the past year have been (1) the development of the final survey instruments; (2) the successful completion of field work; and (3) the development of methods for arranging the coded information on computer tape together with retreival programs which permit access to the data to correspond to plans for analysis.

Experimentation with a number of formats led to the development of an instrument which systematically records information from the respondent's age 14 to the present on thirteen major variables. A summary of the information collected with the instrument is presented in Table 1. The life history section of the questionnaire assigns columns to each of the variables and rows to each year covered by the survey (1943-1968). A single month was defined as the smallest unit for recording information, so that the actual calendar month in which a specific change took place is noted. Figure 1 shows the questionnaire format and gives an example of how the information was recorded for a sample respondent. In addition to the life history information over time, the questionnaire contains a number of cross-sectional or static variables (e.g., parental education and occupation at respondent's

TABLE 1

Summary of Information Collected in Life History Survey

A. Time-Dependent Data, Age 14 to Present

Variable Name	Details	Comments and Definitions
1. Full-time education	Name and/or type of school Degree/highest grade completed	If respondent received "public support" for education (e.g., G.I. Bill of Rights), that information is recorded under No. 11.
2. Full-time employment/ unemployment	For each period of employment, the following is recorded: (a) occupation (b) industry (c) starting and ending wages (d) wages in kind (if applicable) (e) hours/week (f) reason for termination own decision not own decision (g) at termination: had new job knew of job neither (h) got job through: friends family public agency private agency advertisement other (i) formal on-job-training (j) union membership	Full-time employment is defined as employment which requires at least 35 hrs/week Unemployment is defined as a period of time (one month or more) in which the respondent was able to work had a job been available and was looking for work.

TABLE 1 (continued)

3.	Part-time employment	Same as (a)-(e) of No. 2 above.	Part-time employment is defined as employment which requires less than 35 hrs/wk
4.	Part-time education	Name and type/purpose of school Diploma/certificate or course	Formal schooling in which respondent engaged on a basis that was less than the standard "full-time student."
5.	Military service	Drafted or enlisted Location of longest stay while on active duty Place of discharge Ranks at entry and discharge Military education	Military education is education which the respondent received in the military which is equivalent to civilian education. Excludes training received for military occupations.
6.	Other full-time activities	Activities not included in other "full-time" variables	E.g. major illnesses, travel, prison, etc.
7.	Family history	Marital status Age of wife at marriage Births, deaths and adoptions of children	Common Law marriages are included as "marriage."
8.	Wife's education	Degree or highest grade completed at time of marriage Education subsequent to marriage	For wife's education subsequent to marriage, only the completion date is recorded
9.	Wife's employment	Same as items (a)-(e) of No. 2 above	Wife's employment recorded only during marriage to respondent.
10.	Household composition	Relationships to respondent of all individuals with whom he was living	

TABLE 1 (continued)

11. Income adequacy	R's perception of whether or not the household of which he was a member was: able to save live comfortably without saving just manage need outside help to get along	If R reports that the household needed outside support, the source (if public)
12. Home details	Type of housing No. of rooms Rent/own/share Neighborhood	For each housing unit, we inquired as to whether the immediate area was all white; mostly white; half white, half non-white; mostly non-white; or all non-white.
13. Migration history	City/town Country State	If foreign, name of country only. For each rural location, we record whether location is farm or non-farm

B. Cross-sectional data

Variable Name	Details	Comments and Definitions
14. Place of birth		
15. Siblings		
16. Father's education Mother's education		If no father and/or no mother at age 14, education of father substitute recorded and the relationship to respondent of the substitute is specified.

TABLE 1 (continued)

17.	Father's occupation and industry Mother's occupation and industry		Same instructions for "substitute" apply here as in the case of parental education
18.	Family happiness at age 14		
19.	Nationality	"What is the main nationality in your mother's background?" "What is the main nationality in your father's background?"	Asked of whites only.
20.	Religion	a) Religion of family of origin b) Present religion	If a) and b) are different--year of change is recorded
21.-22.	Voting behavior	a) Last presidential election b) Year of first vote	
23.	Open-ended item dealing with major changes in Respondent's life		After respondent completes reply, direct probes deal with: Family life Job/career Education Military service Major moves if respondent has not mentioned these life areas previously.
24.	Short-form verbal achievement test		Adopted from Miner.
25.	Social security number		Requests number and permission for access to Social security file.

INTERVIEWER: ALWAYS INDICATE STOPPING POINT BY END OF ARROW.

Year	Age	1. FULL TIME EDUCATION (a) Month	1. (b) Name and/or type of school	1. (c) Degree/ highest gr.comp.	2. FULL TIME EMPLOYMENT OR UNEMPLOYMENT (Ask 11-a "Support," for unempl.) (a) Month	2. (b) Occupation	2. (c) Industry	Wages (d) In $ Beg. Amt.	Wages (d) In $ End'g Amt.	(e) In kind F=food H=hous'g	(f) Hrs/ wk	(g) Left Job: O=own decision N=not own decision	(h) At termination: H=had new job K=knew of job N=neither	(i) Got Job thru: Fr=Friends Fa=Family Pu=Pub.ag. Pr=Priv.ag. A=Ads O=Other	(j) On-the-Job Training (incl. apprentice trng.) How long? Never? ☐
1943	14		Barker Elem.												
1944	15	June Sept	Barker Cons. HS	8 9											
1945	16	June Sept	St. Louis Public HS #5	10											
1946	17	Sept	↓ Oct	10	Nov	Unemployed (see note p. 3)									
					Dec	Attendant	Gas Station	.75 hr			40			A	
1947	18					↓	↓		.75hr			N	N		
					Apr-July	Stock Clerk	Dept. Store	.80 hr	.80		40	N	N	Pu	
1948	19					Army (see 5.)									
1949	20														
1950	21														
1951	22				Feb	Driver	City Bus Co.	1.10 hr			40			A	Driver Training 3 weeks
1952	23														
1953	24	Sept	City College of New York		Aug	↓	↓		1.30 hr		40	O	N (see note)		
1954	25														
1955	26	June	↓	BA (business)	June	Salesman	Levin Bros. Soap Mfg.	$6,000 yr			42			O	Management Training Program - 6 weeks
1956	27														
1957	28														
1958	29					↓	↓		$7,500 yr		40	O	H		
					Aug	Area Supervisor	O. Sedar Brush Co.	$8,250 yr			40-45			O	
1959	30														
1960	31														
1961	32														
1962	33														
1963	34														
1964	35				Feb	↓			$11,000 yr		40-45	N	N		
												leave of absence for illness			
1965	36				March	Office Manager		$12,000 yr			45-50			back to same job	
1966	37														
1967	38														
1968	39					↓	↓								
Current						Office Manager	O. Sedar Brush Co.	$13,000 yr			45-50				

Figure 1

INTERVIEWER: ALWAYS INDICATE STOPPING POINT BY END OF ARROW.

Year	7. FAMILY HISTORY (a) Month & Marital Status	(b) Wife's age at marri-age	(c) Children M=male F=female No. of birth	(d) Birth control dur. mar. Never? ☐	8. WIFE'S EDUCATION Degree or highest gr. comp. at mar. & since	9. WIFE'S EMPLOYMENT (during marriage to R.): Never? ☐ (a) Month	(b) Occupation	(c) Industry	(d) Wages	(e) Hrs/wk	10. HOUSEHOLD COMPOSITION: Relationships	11. INCOME ADEQUACY: S=Save C=Comfort, no save M=Manage D=Need out-side help	(a) Public Support Share of total income A=All M=More than ½ H=About half L=Less than ½ N=None	Kind of Support
1943											Mother, Step-father, 2 Bros., Aunt			
1944												M		
1945											(June) Mother, Step-father, 2 Brothers			
1946	Nov married	16		no	10th gr						(Nov) Wife and above family	↓ D (family)		
1947			M-July								(June) Wife (July) Wife + Son (Dec) Military	M C		
1948						Jan	Cleaning Lady ↓	Gov't Hosp. ↓	.65 hr .80 hr	40				
1949						Dec	Sales Clerk	10c Store	.95 hr	40				
1950	↓										↓ (Dec) Wife + son	↓ M		
1951	June divorce			↓		June	↓	↓	↓	↓	(Jan) alone	M	L	G.I. Bill (Sept
1952														
1953														
1954											↓ (July) Roommate			
1955	↓										↓	↓	↓ L	↓ (June)
1956	July married	23		yes ↓	A B.	July	Journalist	Daily News Paper	$5,000 yr	40	(July) Wife	C		
1957				no										
1958			F-May	–		Feb	↓	↓	$5,250 yr	40	↓ Wife + daughter (May)			
1959			F-Sept	–							↓ " + 2 daughters (Sept)			
1960				yes										
1961												↓ S		
1962														
1963											↓			
1964						Sept	Journalist	Daily News Paper	$7,500 yr	35	Wife, 2 daughters, Mother-in-law	↓		
1965												C (illness) ↓		
1966												S		
1967														
1968	↓													
Current	married			↓			↓	↓	$9,300	↓	↓	↓		

Figure 1 cont.

age 14, ethnic background, religion, etc.).

Because of the complexity of the information to be collected and the unusual nature of the instrument, neither of which had been approached in any previous research efforts, aids were built into the instrument and special training conducted for interviewers to allow maximum flexibility in executing the survey in the field. As previously noted, the target population in the study is the total population of males 30-39 years of age residing in households in the United States. Individuals in the sample were selected by standard multi-stage area probability methods. The National Opinion Research Center (NORC), University of Chicago, which performed the field work under a subcontract, assigned both black and white interviewers to this survey, and whenever possible the race of the respondent and the race of the interviewer were matched. The national field work was completed between January-June 1969. Sample A, a national sample of the non-institutionalized population of males 30-39 years of age residing in households in the United States, consists of 973 respondents (completion rate of 79.1%). Sample B, a national sample of the non-institutionalized population of Negro males 30-39 years of age residing in households in the United States, consists of 616 respondents (completion rate of 79.2%). All of the coding, editing, and preparation of this survey information was completed by a staff trained and supervised at the Center.

In the end, a very large amount of information was collected on each individual, which required that efficient methods of coding, storage, and processing had to be devised. Retaining a separate storage position for each month on each variable collected in the survey would have far exceeded the capacity of most computers. A method was devised which retained all the information but allowed efficiency in coding and storage of the data. Rather than setting up the same large matrix for each individual in which to locate the survey information, each variable is recorded only when it assumes a new value along with the beginning and ending dates for each duration at a single value. The outcome is a different length record of information for each individual, depending on the changes and complexities in the individual's educational, occupational, residential, and family histories.

Given such variable length records for each individual, with a given time period appearing in different locations on the computer tape records for each individual, the problem then becomes one of retrieving similar information across all individuals in the sample. In addition to the survey information on each individual record, an "index" was constructed for the locations in the record where specific information was stored. Several generalized retrieval computer programs were written to retrieve subsets of data from a master tape onto a work tape. This output tape is then usable as input to existing, standard computer programs. One type of request this program allows is the retrieval of a variable at a given point in time. Several definitions of time associated with a variable were taken into account in the design of the program. First, "time" could mean the respondent's age, so that it is possible to ask, for example, what occupation was held by all men at age 22. Secondly, "time" could mean an actual calendar date. For instance, to compare the occupational distribution of this sample with the 1960 census, it is possible to retrieve the occupation in 1960 for all men in the sample. Finally, the duration of a state may also be requested; for example, duration of job held at age 22, or duration of first job. In addition, a contingent retrieval program has been prepared so that information may be retrieved at a time point determined by a specific event; for example, the occupation a respondent held in the month he was married for the second time. Also, a cumulative retrieval program has been written which gives access to information on either the number of times a respondent has been in a given state up to a specified point in time or the amount of time spent in these states. Finally, retrieval of transitions between states is possible by another program, where, for example, the probabilities of movement between specific occupations for one year periods could be obtained.

A number of preliminary tables have been produced to test these various access programs and to provide some checks on the accuracy of the survey information. First, distributions of variables in the life history sample were compared with documents issued by the federal government and academic publications (e.g., Census and Bureau of Labor Statistics reports). Many of these comparisons have been completed, and no statistically significant differences have been uncovered between the survey data and previously published sources. A second type of external check is a comparison of a small segment of the data (earnings) with data collected by the Social Security Administration. Each respondent was asked to give signed permission for access to his Social Security file, and by a special arrangement with the Social Security Administration, the staff will be able to obtain earnings information for consenting respondents for all covered employment.

In sum, the feasibility of collecting retrospective longitudinal data from national samples, and of efficiently storing and gaining access to it, has been proven for the first time during the past year. The major task for the next year will be to analyze this body of information in accordance with the research questions posed in the Program.

The predominant theme of all of the initial analysis conducted on data from the survey will be the role of education in the subsequent determination of an individual's (and his family's) socio-economic well being. Under this general rubric, the intent is to conduct analyses during the next year dealing with such problems as different routes to the attainment of given levels of education, patterns of participation in the labor force by individuals during their "school years," the economic return to education, the relationships between educational attainment and subsequent occupational histories, the effects of the military on eventual educational attainment, and the importance of education in political participation.

Computer Simulation of Intragenerational and Intergenerational Mobility

The original goal of this project was to develop a computer simulation of large scale intra- and intergenerational social mobility, based on a life cycle model and utilizing Monte Carlo simulation techniques. During the first year of the project (1967-68), specifications were drawn up for a number of the subroutines needed for the simulation, some of the data were obtained, and conferences were held with individuals at other institutions also interested in simulation.

During the past year, the work was continued by Dr. J. Timothy Sprehe and his associates at Florida State University under a separate grant from the National Science Foundation. The Program staff was kept informed of progress on this project either through conferences held at the Center or at the monthly Russell Sage Foundation Seminar. It is highly likely that some of the parameters which will be estimated in the analysis of the Life History Survey will be used by Dr. Sprehe in his work.

Summary and Projections

The staff of the Program believes that the results of the first two years of operations are very encouraging. Staff and associates are beginning analysis of the most detailed set of data collected in the area of intragenerational mobility, secondary analysis of supplementary material is progressing well, and the direction of the Program is better formulated than it had been at the end of the first year of operation.

During the coming year, there are no plans to undertake additional surveys, although as various conceptual problems are resolved some detailed planning for future work will be undertaken.

The Program has become an important center of the research training activities of the Department of Social Relations. A number of graduate students have received extensive training in survey research, thus becoming indispensable members of the research team. The Program hopes to continue to utilize graduate students in all phases of the work in the belief that they are an integral part of its overall objectives.

At the end of the next year of operation, the Program staff hopes to have a better understanding of the processes which "make a difference" in the lives of individuals and be able to reach some conclusions about the types of variables which should be included in a "social accounting" system. In addition, the intent is to have constructed some tentative models and have estimated the crucial parameters for the evaluation of individual socio-economic well being.

PROGRAM III: SOCIALIZATION, SOCIAL CLASS AND COGNITIVE STYLE

Overview

Socialization, the shaping of immature individuals to take their places in adult society, implies many things, including the transmission of habits, attitudes, beliefs, cognitive style, and verbal skills. Obviously, large structures of society such as social class divisions are important determinants of the socialization process. Other forms of social organization related to the home (for example, the number and sex of children in a family) and to the school (what schools take on what tasks, how classes within a school are formed, and how the classroom is internally organized in terms of social variables) also play a large role in the process of academic socialization.

This program is examining the effects of several variants in social organization on the acquisition of motives and of cognitive styles and is studying how motives and styles affect learning or academic performance. The program seeks to discover how such motives and styles may be changed by altering social organization, or how social organization may be changed to capitalize on motives or styles. The program is concerned with school organization at several levels: within classroom reorganization; within school organization; and between school reorganization.

One of the most urgent problems in current education is concerned with providing success experiences for students from ghetto, rural, and blue collar backgrounds. This is extremely difficult when academic success is not even a part of a student's value system. Providing success experiences depends very much on having a total picture of the students and knowing what students consider success to be.

One key to providing success experiences lies in better understanding of the cognitive style and skills the child brings with him to school, a matter closely related to the influence of social class and family composition on the development of cognitive processes. For example, some youngsters are skilled at deducing what actions the school or teacher will reward, are capable of deferring decisions while they search for more information, see interactions in school more in terms of individual needs and values than in terms of role prescription, and are constantly devising hypotheses and learning about things that are novel or unusual. How can learning tasks be restructured so that these attributes, perhaps characteristic mainly of the middle class child, are less crucial?

Other more direct ways of altering organizational patterns depend upon precise knowledge of the dynamics and interrelations of motives, a kind of "demography of motivation." Although there have been many cries about the lack of academic motivation in lower class youngsters, there is a dearth of evidence about what motive patterns do in fact exist. This program seeks at least partial answers to the question.

Another promising approach for increasing success experiences is intervention through the peer group, for example, by creating inter-group competition for academic achievement, or by permitting some students to assume instructional roles directly. Increased participation by students in the traditional teachers' role may be a powerful way to increase interest and promote learning. The usual organization of the classroom stresses individual attainment and often precludes and disapproves interaction among peers even though such interaction may provide a powerful form of reinforcement for students. Teachers' notions of success may also need to be redefined in ways more congruent with students' abilities and goals, for example, by organizing teachers within a school more along lines of shared responsibility for a set of students rather than along traditional subject-matter-department lines.

This is a complex program aimed at the issues just raised. There have been fifteen different projects and activities organized under the program during the year, some of which were completed and some of which will continue during the next year. These projects can be clustered under three general headings.

First, there are projects concerned centrally with "cognitive style and motivation." Since a most serious drawback affecting research in this area is lack of suitable instruments meeting adequate psychometric criteria, there are activities in the program committed to developing and refining such tools. Another major intent here is to investigate how children differ on cognitive style and motivation according to their sex, race, and family background characteristics. Studies have also been conducted to examine how different cognitive styles and motivational or personality components are related to academic achievement on standardized tests. The different projects within this cluster can be conveniently subdivided according to whether they are concerned with elementary school children or older students.

Secondly, there is a group of projects concerned with "language development." Studies are made of semantic systems of different groups of children, the differential use of adjectives and qualifiers, and the contrasts in total verbal productivity of children. The ultimate concern here is with classroom organizational changes and curricular innovations which can enhance the language development of disadvantaged students.

Thirdly, there is a group of projects which explicitly considers school organization variables which may influence cognitive style, motivation, and academic performance of students. One project deals with several experiments in organization in a junior high school, another focuses on relationships among the teaching staff, and a third considers a compository program for disadvantaged high school students being conducted at Johns Hopkins University.

Each of the projects under this Program is listed in Table 2, along with its current status and the particular project cluster to which it belongs. Some notion of the interrelationships among the projects, and how the outputs of certain projects feed into the work of other projects is given in Figure 2. The size of the boxes in this Figure is intended to give a rough idea of the relative effort devoted to the project.

The specific activities in this program during the past year are described below under the headings of the three major project clusters noted earlier.

Cognitive Styles and Motivation

One segment of the activities under this heading deals primarily with children at the elementary school level; another part deals with junior high school students, relying on a survey of ninth grade students.

Elementary School Children. There are five projects (05, 07, 08, 09, and 13) listed under this Program concerned with the cognitive and motivational development of young children, primarily grades 1-3. The goals of this cluster of projects have changed substantially over the past year. Originally, the major aim was to survey across different social classes the incidence of curiosity, a cognitive style assumed to be relevant to learning. Achievement motivation was a second variable of interest, also because of its assumed relevance to academic performance. Work in the first year,

Table 2. SUMMARY OF PROJECTS: SOCIALIZATION, SOCIAL CLASS AND COGNITIVE STYLE

Number	Title	Status	Project Cluster
01	Development of Devices to Measure Curiosity and Need Achievement in Ninth Graders (Pilot Study #1)	Complete (further related work under 04); Center Report #20	Cognitive Style and Motivation
02	Exploratory study of Social System Variables in the Elementary School	Complete Working paper	Organizational Structure
03	Comparison between Rural and Urban Socialization of Language and other Cognitive Skills (especially Reading) with Emphasis on Changes in Community and Classroom Organization	In progress Center Reports #19, 43; (See Report No. 43 for other publications in press)	Language Development
04	Ninth Grade Survey of Selected Cognitive and Motivational Variables (Pilot Studies #2, 3, 5, 6, 7, 8.)	Data collection complete. Analysis far along. First drafts of 5 Center Reports in preparation.	Cognitive Style and Motivation

Table 2 (Cont'd)

Number	Title	Status	Project Cluster
05	Development of Devices to Measure Curiosity and Need Achievement in Children from Kindergarten through Grade 3. (Pilot Study #4)	Near Completion (Further related work under 13) Report in preparation	Cognitive Style and Motivation
06	Evaluation of Need Achievement Training in the Sixth Grade (Pilot Study #19)	Terminated. working paper	Organizational Structure
07	Grade School Survey of Selected Cognitive and Motivational Variables (Pilot Studies 10, 11, 12, 13, 14, 15)	Data gathered Analysis underway	Cognitive Style and Motivation
08	Development of a Curiosity Scale	In progress almost complete. Center Report	Cognitive Style and Motivation

Table 2 (Cont'd)

Number	Title	Status	Project Cluster
09	Academic Achievement, Birth Order and Socialization 4, 5, & 6 grades.	Data gathered Analysis underway	Cognitive Style and Motivation
10	Incidence of Adjectives Among Adults and Children of Various Sub-cultural Groups	In progress; Center Report #41.	Language Development
11	Changes in Organizational Structure Designed to have Positive Effects on Student Motivation: A Pilot Study	In progress. Data collected. Analysis beginning. Working papers (Mathematics Game, Spelling Game)	Organizational Structure
12	Survey of Teachers	In progress. Data collected. Analysis in progress. Working paper	Organizational Structure
13	Factors Affecting the Development and Expression of Curiosity: Exploratory Studies	In progress	Cognitive Style and Motivation

Table 2 (Cont"d)

Number	Title	Status	Project Cluster
14	An Evaluation of the Effects of the Hopkins Pilot Project for Disadvantaged Black High School Students	First draft of Center Report.	Organizational Structure
15	Long Term Effects of Children's Textbooks on Social Behavior	To be initiated in Fall, 1969	Cognitive Styles and Motivation

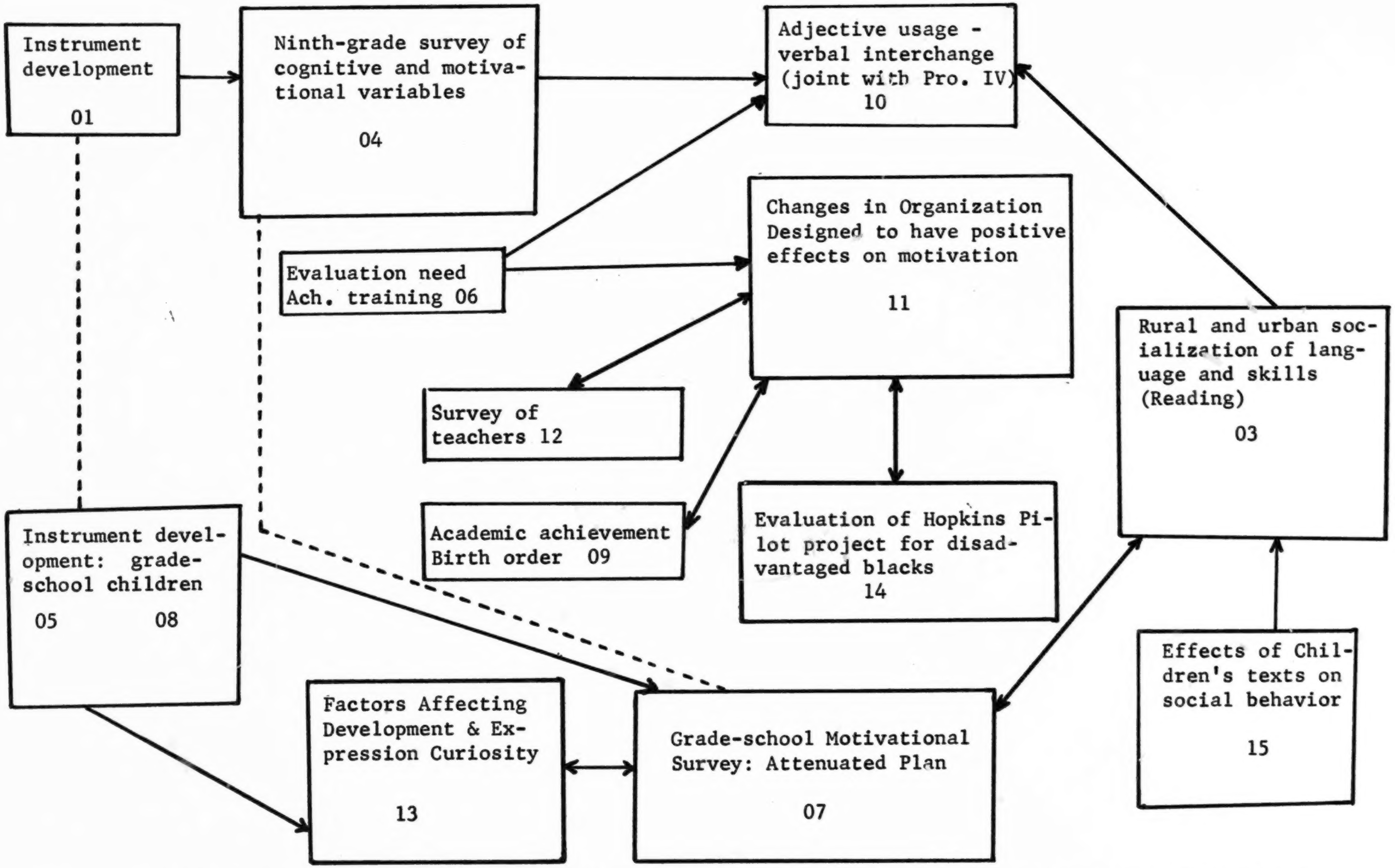

Instrument development
01
Ninth-grade survey of cognitive and motivational variables
04
Adjective usage - verbal interchange (joint with Pro. IV)
10
Evaluation need Ach. training 06
Changes in Organization Designed to have positive effects on motivation
11
Rural and urban socialization of language and skills (Reading)
03
Survey of teachers 12
Academic achievement Birth order 09
Evaluation of Hopkins Pilot project for disadvantaged blacks
14
Instrument development: grade-school children
05 08
Effects of Children's texts on social behavior
15
Factors Affecting Development & Expression Curiosity
13
Grade-school Motivational Survey: Attenuated Plan
07

Fig. 2 Diagram Showing the Interrelations of Various Projects under Cognitive Style Program. See Table 2 for a listing of the projects, including present status. Numbers in the boxes here are identification numbers in the project designation. Dotted lines indicate data collected primarily for one project are being used to aid in interpreting data from other projects.

1967-68, centered heavily on the development of behavioral measures of curiosity (Incongruous Choices and Incongruity Game) and on teacher rating procedures for assessing curiosity and achievement drive (Adjective Checklist and Student Behavior Profile).

The second year has seen a major re-direction and expansion of goals. The focus has broadened to include another, more diversified measure of curiosity and to incorporate three additional cognitive variables--ability to detect verbal absurdities, amount of information learned and recalled, and fluency and flexibility of problem-solving efforts. Work on achievement motivation has been intensified and a new variable, fear of failure (test anxiety), has been brought into the research. The major objectives of these projects now are (1) to develop methods of measuring several cognitive styles, skills and motives which may play a role in the general learning process; (2) to specify the importance of the selected variables for academic achievement; and (3) to contribute to knowledge of the appearance and development of curiosity, problem-solving skill, and other cognitive-motivational characteristics within the family and school; and (4) to propose modifications in classroom organization and practice which affect this cognitive development.

Three steps taken which lead to these goals will be described: (1) instrument development, (2) collection of data and (3) analysis.

The creation or adaptation of instruments has been a time-consuming first step in this research. Although further refinements and additions are likely, this stage can now be considered virtually completed. In the first year, the following innovations were developed: two behavioral measures of curiosity for young children (Incongruous Choices and Incongruity Game); a non-projective measure of achievement motivation; an Adjective Check-list for obtaining teachers' assessments of curiosity; and a Student Behavior Profile for obtaining teacher evaluation of curiosity, achievement strivings, and achievement blocks. This year saw refinement of the Pick-a-Theme procedure; adaptation and revision (with illustrations) of Maw's paper-and-pencil test (1964-65) of active curiosity;[*] adaptation of Maw's verbal absurdities procedure; adaptation of familiar items from "creativity" batteries to yield a problem-solving measure suitable for 1st, 2nd and 3rd graders; and creation of a story-technique and recall test for evaluating children's tendency to absorb and retain information.

In the first year of data collection activities, approximately 50 middle class kindergarten children and 50 middle class 2nd graders were tested on the age-appropriate Incongruity procedure. These children were rated by their teachers (four in all) on the Adjective

---

[*] Personal communication and published reference

Checklist and Student Behavior Profile. IQ scores, grades, and sibling data were collected from school records. In the past year, data collection continued. Table 3 below shows the approximate number and kind of subjects on whom data is now available.

TABLE 3 DATA COLLECTION FOR PROJECTS 05, 08, 13, 07, AS OF JULY 1969

	Interest in Incongruity	Active Curiosity	Problem Solving	Information Learning	Detecting Verbal Absurdities	Achievemet Motivation	Test Anxiety	Teacher Ratings of Curiosity Achievement Drive Blocking	I Q	Grades	Iowa Achievement Tests	Sibling History
Middle class kindergarten	50							50	50			
Middle class grades 1-3	280	180	160	160	160	60	180	160	160	279	60	280
Lower class grades 1-3	60	300					300	40	300	60	60	60
Middle class grades 4-6							180		180	60	180	
Lower class grades 4-6							200		200		200	

The table shows that sufficient information is on hand to take a solid step in the direction of meeting objectives (2) and (3) cited above. Analysis of data for the middle class, grades 1-3, is well advanced. The remaining analyses will begin when time permits.

Classroom observations were undertaken towards the end of the second year in the middle class school where most of the data collection has been carried out. The object was to become acquainted with forms of classroom organization now in practice and variations in teaching styles -- especially those that seem relevant to the appearance of curiosity, problem-solving skill, and information learning. Guidelines for future observational work have been drawn. The outgrowth of this research is of two kinds: measuring instruments and substantive findings. This presentation will focus mainly on the latter.

The survey of cognitive and motivational behavior in grades 1 through 3 of a middle class school has yielded an intriguing developmental picture. Scores on the cognitive variables -- ability to detect verbal absurdities, information learning and recall, and problem-solving skill -- increase with age, as would be expected. The amount of growth between grades 1 and 2 is particularly striking and is accompanied by a sharp upswing in anxiety about failure. There is also a rise in active curiosity during this period. Sex differences are most pronounced in grade 1, at which point girls perform better on every cognitive dimension than boys. The only resource on which 1st grade boys exceed girls is curiosity. The sex difference in curiosity persists through the end of third grade, and the boys "catch up" to the girls by that time on cognitive skills.

The pattern of variables related to academic achievement is different over time, and different for boys and girls. Analyses of academic achievement thus far are based on classroom grades for subject matter mastery. Correlations of IQ with grades are statistically significant: on the order of .50 for grade 2 and a declining .30 for grade 3. No IQ tests are given in grade 1. (It should be borne in mind that the IQs in this school tend to be average and higher, with a mean around 114.) Test anxiety is not so disruptive of academic performance as was expected, again perhaps because of the high ability level of this sample. Negative relationships falling just short of significance are typical for boys in grades 1 and 2; weaker negative relationships obtain for girls. Further analyses will explore possible non-linear relationships between test anxiety and grades and examine the interaction of IQ and test anxiety with grades. The lower IQs sampled in the lower class schools will permit further elaboration of the impact of test anxiety on performance.

One class of variables is consistently equal to or better than IQ in predicting grades. It is the teacher's own rating of the child's curiosity and achievement drive. This is not surprising, of course, since the teacher is the one who allocates grades. Nonetheless, it is of considerable interest that the Checklist curiosity scale, which is unrelated to a measure of halo effect, should yield an association with grades as high as that of measured IQ. Children rated as active, adventurous, resourceful, demanding, aggressive and determined do well in school. (But does the school do well by its children in promoting such qualities?) On ratings of behavior more clearly relevant to learning -- "gets excited when new or unexpected things are introduced," "likes to try to solve problems," "likes to do better than others in class," from Student Behavior Profile -- even stronger relations to academic performance are observed.

Active curiosity -- by which is meant a child's stated disposition to explore, touch and find out through his own devices -- is significantly related to academic performance in the first grade, but not thereafter. By grade 3, a high score on a pattern of answers that is negatively related to active curiosity indicates that asking those in authority, rather than finding out by one's self, is what pays off in good grades.

Grades are only one measure of academic excellence, and a highly fallible measure. From grade 3 on, when standardized achievement tests become available, these will be used as additional measures of subject mastery. It is also possible to focus on the cognitive variables themselves. For example, problem-solving flexibility, a measure of the number of different classes of solution the child can offer to problems, is often viewed as a form of "creative" excellence.

The present results show that for first graders, anxiety about failure bears a significantly negative relationship to problem-solving, whereas the capacity to learn and retain information bears a strong positive relation to this skill. Active curiosity is positively related to problem-solving in boys, but is unrelated in girls. In grades 2 and 3, the information-learning variable still shows the same strong association. Fear of failure continues to be inversely related to problem-solving for girls, but this relationship grows smaller for boys. As in the case of grades (school subject mastery), there is a significant positive association with curiosity in grade 1 which "washes out" and even reverses by grade 3. It may be that children who persist as long as grade 3 in an active-curious orientation, preferring to find out things on their own initiative, find it difficult to learn or perform at the behest of a teacher or teacher-like examiner (problem-solving interview).* If this is the case, we need to find ways of bending the classroom environment so that the talents of the actively curious child may be engaged.

One of the ultimate goals of this research is to understand the way in which family and school environments shape cognitive-motivational development. Preliminary analysis of curiosity in relation to sibling history suggests an advantage for children with siblings of the opposite sex. This effect is most marked for girls. The finding for girls can be interpreted most simply in terms of males' greater curiosity, as observed earlier in this report. It is interesting that the teacher judged by observers as most friendly to curiosity arranged classroom seating so that girls and boys alternated, and so that a complete change of neighbors took place every few weeks! Training procedures for increasing curiosity and problem-solving flexibility will be devised and piloted late next year. The composition of training groups will be determined after further data analysis.

---

* Teachers, furthermore, may ignore or punish students who do not treat them as sources of knowledge.

Only a brief word can be said about the many measuring instruments themselves. Their status is now being evaluated. The two teacher rating procedures for curiosity both have high reliability (homogeneity) and are highly intercorrelated. Validity in terms of the child-based measures of curiosity appears more problematic. The Checklist is somewhat better for girls; the Behavior Profile for boys. It may be that teacher ratings and child-based measures of so-called curiosity tap different types of curiosity (e.g., more vs. less socialized into academic channels) and will therefore prove useful for different purposes.

A series of reports pertinent to the objectives listed at the outset will be prepared during the coming year.

Another separate project (09) is concerned with identifying major sources of academic achievement motivation for a white middle-class sample of children. In this investigation a link is being formed between a structural variable (birth-order), socialization practices, and academic achievement. Specifically, the hypothesis being examined is that the often-observed relation between birth order and academic achievement is a function of the specific socialization practices typically applied to first born children. A sample of 102 boys and 79 girls in the 5th, 7th, 8th, and 9th grades were given the Socialization scale of the California Psychological Inventory. The Socialization scale (So) is a well-known and highly valid index of the degree to which a person has internalized the rules, prescriptions, and prohibitions of his society, all expected end-products of successful socialization practices. Birth order information and indices of academic achievement were also recorded for each child. Preliminary analyses show that, in every age group, first-born girls receive higher So scores than all other girls, and also achieve at a higher level. Conversely, first-born boys receive lower So scores than all other boys, and appear to achieve at a lower level.

Further analyses are necessary to determine the amount of confidence which may be placed in these findings. However, the results thus far seem to indicate that there is a definite association between birth order and academic achievement in grade school which is also related to socialization. The direction of these findings (i.e., the fact that the association is in one direction for girls and in the opposite direction for boys) remains to be explained.

Ninth Grade Survey. Two projects have been undertaken for ninth grade students within the project cluster concerned with differences in cognitive style and motivation.

One Project (01) was a pilot study to test the feasibility of a survey of cognitive style variables in ninth-graders. New instruments to assess need achievement and curiosity were developed. It was hoped that these new instruments -- with appealing persons depicted, sex-appropriate actors, and other "improvements" over previous pictures -- would not be subject to the drawbacks felt to be undermining results with the older instruments.

Another project (04) involves a survey of ninth graders covering several social class and/or residential groups (both black and white students) and the two sexes in such a way that many comparisons controlling IQ, sex, and other variables can be made. The purpose of the survey was to explore motivational and cognitive style variables of importance to school performance to try to see how one large form of social organization, social class, is related to the development of certain attitudinal and motivational variables.

It seems important to establish a "demography" of the various motivational variables so that those motives possibly facilitating (or impeding) the school's task can be identified and evaluated. For example, what kinds of specific motivational strengths (or weaknesses) does one find in blue collar youngsters? (There is some evidence that academic achievement may be more acceptable in blue collar than in middle class girls.) How would one expect motivational attributes of students to be influenced by grouping practices within a school? For example, if students are put in "low" sections do they experience a lessening of control beliefs? Are particular motivational strengths of certain groups being overlooked that could be capitalized upon? For example, are rural dwellers strong in sense of control? These are the kinds of questions the ninth-grade projects hope to elucidate.

The pilot study (01) developed new projective (TAT-like) materials to measure need Achievement. Also extensive elaboration of some projective materials to measure curiosity (developed by Beswick, 1964) was undertaken. The pilot project is reviewed in detail in Center Report No. 20 (Greenberger and Entwisle, July 1968). The new materials for measuring need Achievement are presented in Center Report No. 35 (Greenberger, et al., November 1968) and those for measuring curiosity are presented in Center Report No. 36 (Greenberger and Kervin, December 1968).

The examination of the pilot study and survey materials on the newly developed projective instruments has led to a general consideration of "fantasy-based" measures. This general concern was raised by the possibility that the projective measures of need Achievement, and probably curiosity, may have reliability too low for them to be useful. For the need Achievement instrument the average reliability, using internal consistency estimates across the scores for the four stimulus pictures, is 0.22 for girls and 0.25 for boys, for 22 subsamples of ninth-graders ranging in size from 16 to 41 (a size typical of much of the previous research on this variable). The need Achievement literature, although vast, contains almost no information on reliability (except inter-scorer agreement). Such information as does exist, however, strongly agrees with the authors' finding of inadequate reliability. An extensive review of the literature on this topic and addressed to the issue of inadequate reliability of fantasy-based measures is a major report under preparation.

The finding of inadequate reliability has naturally slowed down the analysis of the entire ninth-grade survey (about 700 respondents). What was planned as a fairly routine analysis of a multivariate study has had added to it an extensive psychometric study of the present test data and data from other sources, plus a careful combing of a large literature for relevant material (with re-analysis of published data in some cases). Although other workers have not tried to estimate reliability by the methods in use on this project, there is a great deal of published material consistent with the conclusions of this project. Also, investigated in some detail are the psychometric properties of criterion variables (grades) and other attributes of projective responses (story length). Such "extraneous" variables as story length may have interacted to produce the generally inconsistent, but tantalizing occasional positive findings reported in the need Achievement literature (the generally "better" results with males than with females, for instance).

It turns out, then, that a large effort to develop new test materials and to get at two possibly important determinants of cognitive style, need Achievement and curiosity, has pointed instead to a potentially fundamental and fatal weakness in a body of research accumulated over almost two decades. It seems to be the kind of situation where others have obtained preliminary negative results on many occasions and either dismissed them entirely or else moved on to other research areas without bothering to document the negative results. Consensus is mounting (e.g., Klinger, 1966) that it may be fruitless to try to measure a "global achievement motive," especially across social class groups, although the reasons advanced by others invoke more esoteric explanations than the basic lack of reliability in fantasy-based instruments pointed to by this project as the chief factor responsible for the null results.

On the positive side, the methodological studies of this project led to the identification of verbal productivity as a possibly important dependent variable in its own right. (Data on verbal productivity from the ninth-grade survey have been used extensively in projects discussed in a later section of this report.) Verbal productivity has substantial correlations with school grades, especially for boys, when IQ is held constant. (This factor may account for some of the "positive" n Achievement findings of other researchers.) The psychometric properties of the verbal productivity measure are being investigated and appear satisfactory on several counts: (a) adequate reliability, (b) meaningful and sensible relations with other variables such as grades, and (c) provocative sex and social class differences. Consequently, verbal productivity has turned out to be a major unforseen dependent variable in the survey.

To sum up to this point: measures of two major dependent variables, need Achievement and curiosity have flaws which may make them unsuitable for further use. This finding is probably applicable to a vast number of previous research studies by others incorporating these variables.* A forthcoming Center report will document this project's findings about lack of reliability in fantasy-based instruments and resolve some of the tantalizing paradoxes that have puzzled workers in this area. This report is a major methodological contribution of the project. Fortunately, these same methodological studies require extensive investigation of verbal productivity, and this variable turns out to be an exceedingly interesting variable in its own right. A Center report (now in first draft) calls attention to the properties and potential usefulness of the verbal productivity variable, and another report, No. 41 (Entwisle and Garvey, May 1969), joint with the Linguistics Program ties it in with linguistic research.

---

* In discussing an achievement instrument for use with younger children, a leading psychometrician notes the presence of complex position effects and points out that "developers of other objective tests...have not been plagued by the problem simply because they are blissfully unaware of its existence."

Findings for the other major dependent variables on the ninth-grade survey are not complete, but preliminary ones can be cited. (Intensive further work on these is planned over the summer of 1969.)

(1) Woman's role. There are large differences between boys and girls in views of woman's role, with boys uniformly holding more conservative views than girls. By social class, the least liberal boys are those of highest status (high IQ, middle class, white boys) and those of rural origin. White boys are much more conservative than Negro boys.

(2) Anxiety about tests. As others have noted about anxiety, girls are consistently higher than boys. Whether this is indicative of girls' viewing anxiety as more admissible than boys is a moot question. Comparisons of anxiety between schools show that average IQ students in inner city schools have levels of test anxiety like the most able in another school, such as high IQ youngsters in a middle class institution.

(3) Control of academic situations. Work at the moment is least advanced with this variable. Because of the psychometric weaknesses

uncovered in fantasy-based measures, and already discussed in some detail, considerably more caution has been exercised in studying other variables, particularly as regards accepting published findings. The psychometric properties of this instrument are now being reviewed and the presentation of survey results must wait upon this.

At present, five Center reports are partially written based on the ninth-grade survey. The five reports cover: (1) Need Achievement and Productivity; (2) Reliability of Fantasy-Based Measures of Need Achievement: A Critical Review; (3) Woman's Role as seen by Ninth-Graders; (4) Test Anxiety and its Effect of School Performance; and (5) Sense of Academic Control.

If there is one thing that is clear from the ninth-grade survery thus far, it is the need for suitable measures of cognitive style and motivational variables.

Language Development

From the outset of this Program, attention has been paid to different aspects of children's language development. Part of this work has been conducted in conjunction with Program IV in the Center, and both programs have benefitted from this similarity of interest. The aspects of language development in which research projects have been conducted in this Program include semantic systems of different groups of children, the differential use of adjectives and qualifiers, and the contrasts in the total verbal productivity of children. The main objective of Project 03 is to point up differences in cognitive style (particularly in the area of language development) between rural and urban grade-school children and between minority group children and others and to relate such differences to variability in social organization of home and community. After differences are located, the objective is to devise specific classroom training procedures based on these differences to enhance language development, particularly as it relates to reading.

Preliminary work on semantic differences in linguistic development between black and white inner city children is summarized in Center Report 19 (Entwisle and Greenberger, May 1968). This work is extended and supplemented in a chapter by Doris R. Entwisle, "Semantic Systems of Children," to appear in Language and Poverty, Perspectives on a Theme (in press), F. B. Williams, (Ed.) Chicago: Markham Publishing Co. Additional work on semantic differences between Amish children and rural Maryland children, and comparisons between both these groups and inner city children was reported by Doris Entwisle as part of a symposium, "Socialization of Minority Groups," at Temple University, March 19-21, 1969 (to appear in the Symposium Proceedings). Much of this work is also presented in Center Report 43 (Entwisle, June 1969). Although a great deal of current research is aimed at problems of syntax and phonology, the third major division of language learning-- semantics --has received scant attention. This work attempts to help fill that gap.

Work to date suggests strongly that semantic development, which is minimal to age 5 and then appears to be occurring principally over ages 5 to 10, proceeds at a slower pace in minority group children (black disadvantaged, old-order Amish) than in majority group children. There seems to be a constriction in semantic structures of inner city children, suggesting a kind of conceptual impoverishment, particularly among blacks. This is not true for the Amish, who develop more slowly than white middle class children, but whose cultural isolation is of a very different character from that of the inner city children.

A slowed pace of semantic development may be much more a consequence of school and neighborhood segregation and a more important cause of poor reading performance in disadvantaged children than has hitherto been suspected. In learning to read, great reliance is placed on language already acquired through oral means -- the child in attempting to decode printed characters probably leans heavily on testing what he decodes against big blocks of language he has already internalized rather than on decoding single words (or letters). Thus, if he attaches a very limited range of meanings to a particular word so that in some contexts although he "knows" the word it will not be meaningful, he will generally be unsuccessful in reading the sentence. Although work with college students suggests that semantic enrichment produces more varied word associations in them than in fifth-graders, and already suburban fifth-graders have more varied associations than third-graders, inner city fifth-graders are moving in the opposite direction toward a more constricted (less semantically enriched) set of associations. The semantic enrichment supposedly occurring over the elementary years may not be proceeding as well in inner city children as in other groups. More study (experimental rather than observational) of the specific nature of semantic development in different social class groups is now being designed. This will be of direct aid in elaborating the "Giant Steps" game, now to be described. To attack specifically problems of semantic enrichment and reading, a game called "Giant Steps" is being developed. This game can be adapted for children at all levels, from pre-reading through junior high school. It is designed to provide specific training in areas of language (semantics) found to be weak. It resembles a cloze procedure. So far the game has been tried out extensively with black and white third-graders, and it is capable of holding children's interest over long periods of time (months). The children with whom it was played volunteered to play it week after week. The basic format of the game can be varied by incorporating different stories. A small amount of work has been done adapting the game for first-graders and for low-achieving junior-high-school students.

The game puts one person, a teacher or a student, in the role of story-teller and moderator. Some exploration was carried out on the feasibility of permitting sixth-graders to serve as moderators for third-graders -- this worked well. The game is oral (all hear the words that one person is practicing) and is organized around two teams (preferably of 3 or 4 persons each). Others have provided experimental evidence that such practice is of direct help in learning to read. The pilot work suggests that the game is both enjoyable and capable of sustaining interest over many weeks. Individual stories (not too long) are the basis for the game, and merely by changing the story the game can be adjusted to any age level.

Research of others shows that practiced readers employ high-level skills, searching for beginnings and endings of words and using spaces so that large units are guessed at. The guesses obviously depend upon the reader's knowledge of both syntactics and semantics. If semantics developing over the grade-school period is a domain in which minority-group children are deficient, as other work under this project indicates, then little semantic information is available to support reading "guesses." The game attempts to train on particular word sequences and on paradigmatics for verbs and adverbs (shown empirically to be weak).

A limited amount of other data on cognitive style (the nature of spatial concepts held by urban children) was procured. Exploratory work suggests that they have clear models of the city but the spatial grid is framed in terms of social cues; directions are coded in terms of distances from one traffic lady to another.

Other work relevant to forms of social organization is a limited sampling of lower class mothers to obtain both language samples (used also for Project 10) and word associations. Limited interview data on how such parents respond, or fail to respond, to children's scholastic efforts were also obtained.

This project deals with an important kind of linguistic development (semantics) that to date has been the focus of very little research. It is an area that may have a much greater bearing on reading instruction than has so far been suspected. Certain kinds of classroom reorganization, in particular more group-oral procedures, may aid specific kinds of semantic development. This is one straightforward way to increase the amount of verbalization in the classroom. The joint Project (#10) with the Linguistics Program is about to provide documentation on the lack of verbal interaction in ghetto classrooms, and some observations are planned to see if classroom aides (a new program in Baltimore City) result in increased verbalization in classrooms. The joint project with the Linguistics Program has studied the incidence of qualifiers in oral and written production of blacks and whites and has resulted in the publication of Center Report No. 41 referred to earlier.

The first objective of this Project was to discover whether free use of qualifiers differs by race, sex, social class, IQ, and/or age grouping. For preliminary study, a limited and selected set of words of one form class (adjectives of high frequency) was chosen for examination. The problem merits attention because of its bearing on language-and-cognition research. The view is widely held, but inadequately documented, that lower class individuals use an unelaborated linguistic code, and further than such a restricted code implies a restricted world view or at least a conceptual set more restricted than, or different from, that held by speakers of an elaborated code. The problem also merits attention because almost no research has been directed at the *free* use of language, although such use seems most germane to problems of verbal interchange in the classroom.

The data indicate strong sex differences within every social class, IQ, age, and other division of the sample. Females produce more words than males whether they are white middle class teachers or black, low IQ, inner city 9th graders. Race *per se* is not associated with differences in production when social class and sex are controlled. More important, even when total production is controlled, in all cases females are producing more adjectives than males. There are strong IQ and/or social class effects within both sexes.

Other research is now being designed to clarify the effect of social and individual variables on the quantitative production of linguistic structures. In particular, large and consistent sex differences in lower class children suggest that some of the basic features at work in the socializing process, especially the socialization of language, are sex-specific. Attention of this project is now turning to verbal productivity in the classroom. Casual observation from both Programs supports the position that verbal interaction is slight in inner city schools (the literature suggests it is slight in classes made up of almost any kind of minority-group children) and frequent in suburban schools. Some training procedures to elicit more extensive verbalization in the classroom are being considered, but perhaps the most obvious first step is to change classroom organization by a variety of tactics so the teacher ceases being the chief verbalizer.

Data collected so far indicate not so much that the language of lower class speakers is different as that its quantity is markedly less. One criterion of the success of _many_ kinds of possible reorganizations of classrooms may be a measure of the child-produced language in the reorganized vs. the traditional classroom.

Organizational Structure of Schools

A third cluster of projects in this program deals explicitly with specific variations in the organizational structure of schools which may influence the cognitive style, motivation, and performance of students. One project, set in a junior high school, considers variations on four different organizational characteristics. Another project is focused on the motivational status and informal social organization of teachers in a school in the United States and hopefully schools in Norway. A third project is evaluating a Johns Hopkins pilot project for disadvantaged high school students.

Organizational Variations in a Junior High School. Various outcomes are investigated of four different organizational characteristics being considered: evaluation of a guidance-oriented program; group exercises in evaluation; variations with homework assignments; and specific academic games.

Evaluation of Guidance-Oriented Program

The "guidance-oriented" approach, originated by the staff of Ridgely Junior High School, a white middle-class school in Baltimore County, involves changes in organization, curriculum, and teacher style. It was piloted by the school in a single grade in 1967-68 and expanded in 1968-69 to grades 7, 8, and 9. The organizational change is two-fold. First, teachers of the four academic subjects (English, social studies, mathematics, and science) meet weekly as an inter-departmental team to discuss the students and the classroom dynamics. Ordinarily, the teachers meet intradepartmentally and focus on subject matter and administrative details rather than on students. The second organizational change is specific to the teaching of mathematics, where two or more sections of students work jointly under one or more teachers (teaching team). The curriculum change is difficult to describe, but in general the emphasis has shifted from teaching grade-level appropriate material in a simpler manner to teaching instead skills and topics below grade-level on which these students "missed out." The change in teacher style involves a heavy emphasis on rewarding and commending students for whatever level of work they do, and teaching below grade level makes this feasible. Teachers are expected by the school administration to be receptive to anything students may wish to talk over with them. Disciplinary problems are handled, if possible, not by the Principal, but by the teacher on the team to whom each student relates best. The guidelines for the "guidance-oriented" program are very loosely defined by the school, but the goals are an improvement in the self-esteem of students so treated, in their attitude towards learning and in their actual achievement.

This evaluation is based on a before-after design. Basic Education classes in grades 7, 8, and 9 at Ridgely will be compared with the sections one step up from each academically. The latter are not taught within the guidance-oriented framework and therefore serve as controls. Additional control classes in Basic Education (no guidance-orientation) from Woodlawn Junior High School in Baltimore County also have been obtained for grades 8 and 9. Comparison with average ability sections at Ridgely will be made on a small number of the dependent variables listed in Table 4.

The choice of variables for assessing the effect of the overall guidance-oriented program was dictated by practical considerations and by the aims of the program. Thus, for a program attempting to increase students' self-esteem and increase their feeling of success with school work, measures of self-concept and of attitudes toward

Table 4. OUTLINE OF RESEARCH ON ORGANIZATIONAL STRUCTURE OF SCHOOLS

Area of Interest	Independent Variables & Project-Designations	Dependent Variables	Instruments
Individual values	Guidance-oriented program	1. Self Concept 2. Sense of Control 3. Test Anxiety 4. Verbal Productivity	CPI composite scale & Semantic Differential Crandall's IAR Scale Skill/chance question Mandler-Sarason questionnaire
School & teacher-Student relationships	Guidance-oriented program	Attitudes toward school, subject matter, teaching (positive-negative evaluation, difficulty, usefulness, distance from self)	Semantic Differential
Formal Reward System	Grading procedures in Mathematics: Guidance oriented program	Attitude toward teachers; satisfaction with performance	Questionnaire on Grades Classroom Climate Questionnaires in Four Major Subject Areas
Decision-making processes	Test taking: Cooperative vs. teacher decision making	Test anxiety	Mandler-Sarason scale Crandall IAR Scale
Character of student subcultures	Homework: team vs. individual goals	1. Responsibility for doing assignments) 2. Quality of homework) 3. Attitude toward homework (Positive-negative; usefulness; distance from self)	Records of homework output Semantic Differential

3

Table 4 (Cont'd)

Area of Interest	Independent Variables & Project-Designations	Dependent Variables	Instruments
	Math Game: Team vs. individual goals	1. Amount of learning	Arithmetic test administered after two kinds of game experience
	Spelling Game	2. Willingness to drill) 3. Willingness to help) 4. Achievement values)	Questionnaire Spelling test administered after Spelling game
	Total treatment: guidance - oriented program plus Homework & Game experiences	1. Degree of cohesion 2. Fewness of rejects 3. Overlap between choice of "friends" & "hard work" partners	Sociometric ratings

school, academic subjects, and teachers were obviously relevant. (Other variables were originally selected because the program might have side effects on them; for example, increased achievement motivation and curiosity.) Research conducted during 1967-68 (Projects 01 and 04) had produced instruments to assess these variables, although more recent work suggests the instruments are inadequate and so these instruments were not included in re-testing.

Any serious attempt to alter motivational states of pupils along the lines of providing for modest degrees of success are moderated by the school's evaluation procedures, particularly the report card. In many school systems, a ceiling is imposed on grades which students in low tracks may be awarded. For example, in the Baltimore County system, no child in a "Basic" section can receive more than a C* in a major subject. (The asterisk indicates that his work is below grade level.) There seems little doubt that such regulations serve to attenuate any possible positive motivational effects; yet this is a domain in which administrative personnel are seldom receptive to innovation.

Through actions too lengthy to describe here, the school has begun a new reporting system for mathematics grades. Students in the Basic sections now can earn grades of A* and B*, the asterisks conveying the same meaning as before. The revised grading system accurately communicates to the child how satisfactory his work is in comparison with others at his level. This project is studying the impact of this change by examining questionnaires administered by the school before and after the change. Preliminary data (after the first revised marking) show students to be very enthusiastic about the change. Further analyses will show whether achievement improved, and whether a more positive affective response occurs with mathematics than with other subjects where grading was not revised.

Repeat testing was carried out in May, 1969, for students who had participated in the guidance-oriented program, for other control students in the same school, and also for control students (grade 8 and 9) in another school with no program. Tests are being scored and data analyzed. No results are yet available.

Group Exercises in Evaluation

The erosion of positive affect between students and teachers is often attributed to the teacher's being required to serve as judge and to dispense grades. Of the several functions tests serve, feedback to teachers on adequacy of instruction and feedback to students on adequacy of learning efforts are by far the most important functions at the junior high school level. The usual test procedures are often both ineffective and unduly abrasive. A specific training program, aimed at changes in classroom structure for evaluation exercises, is another specific intervention undertaken in this cluster of projects.

For purposes of convenience, tests are divided into two segments -- structure and content. Extensive observation supports the notion that a frequent cause of poor performance is inattention to directions or instructions. The poor achiever often has "poor test habits." (In the usual curriculum, study-skills such as map and graph-reading, dictionary work, etc., receive attention, but there is little explicit drill on the reading and following of directions). One part of the "Exercises in Evaluation" is directed toward acquainting students with the various possible types of test formats -- matching, multiple choice and other types -- and giving specific practice in reading and following the kinds of directions commonly found with standardized tests. To emphasize following directions and self-checking procedures, items chosen are far below the difficulty level of items suitable for junior high school students, and the students themselves fabricate tests using building blocks of directions, item sets, etc. modelled after those found on standardized tests. Thus, initially the content part of tests will be pretty much ignored and attention directed toward test formats. Brief exercises are being devised to illustrate and allow practice on test-taking strategies. Actual tests used by teachers of the students participating are being used for illustration.

A much more important part of "Group Exercises in Evaluation" is the cooperative preparation of classroom tests. A few preliminary trials of this indicate that the students tend to produce much the same test that a teacher would devise if he were doing it without students' consultation. The advantages of cooperative test preparation are obvious: (1) the role of the teacher is changed from judge to collaborator; (2) the student's sharing of responsibility for a test probably increases positive affect towards the teacher and involvement of the student in his own performance; and (3) the students adopt a different view of the subject matter and naturally are led into a strategy of analyzing topics from the questioner's viewpoint -- a strategy that good students apparently hit upon, but which seems to elude the poorer student.

Progress to date on this classroom intervention includes the collection of many types of classroom tests and preliminary work on other materials needed. Plans have been drawn to begin the intervention with one science teacher in the fall of 1969.

Homework Assignments

This project involves an attempt to use peer group influences to promote academic goals and an investigation of the effects of group vs. individual incentives in increasing responsibility for doing acceptable homework. A limited number of Basic Education classes were organized randomly into small teams of students competing to turn in the "best homework record." During the spring of 1969, homework was assigned according to a fixed schedule by each teacher of regular academic subjects. Records were kept by the teacher and each team leader. In the control sections, public record-keeping by the teacher was maintained, along with the identical homework assignments. Results demonstrated an initial favorable impact of the team organization which diminished over time. Differences in the skill and enthusiasm of the teachers in supervising this project were observed and clearly affected the outcome. Much, however, was learned from this trial run. The experiment will be tried again during the 1967-70 academic year, with a portion of the actual homework assignments in the hands of the students rather than teachers. A guidance department member, skilled in group dynamics, will supervise the work.

Games

Two specific academic games were developed for experimentation at the same junior high school -- one in mathematics and the other in spelling. An elaborate experiment was carried out using this mathematics game with the aid of mathematics curriculum specialists in Baltimore County. This experiment assessed the impact of individual play of the game compared to team play with all other (placebo) factors held constant.

The outcome of this experiment is presented in detail in a working paper entitled "A Game for Mathematics Drill," May, 1969, by Doris R. Entwisle and Ellen Greenberger. Briefly, there was no difference between posttest learning scores for students who played the group version vs. students who played the individual version. There was a decided preference for group play. Day-to-day scores suggest that the game will be played more actively in the group version. When the two 7th grade sections who played the game are compared with two 8th grade (control) sections who did not play the game, there is a markedly more positive attitude toward mathematics instruction among those who played the game. This more positive attitude could also have sprung from other sources, however, such as team teaching of 7th grade mathematics or other changes tried with the 7th grade.

The spelling game was devised with the help of eighth grade English teachers. An experiment was carried out with this game to see whether students actually learned to spell words as a consequence of playing the game. Results of the experiment are described in detail in a working paper ("A Game for Spelling Drill," July 1969, by Doris R. Entwisle). There is unequivocal evidence that the game was effective in teaching spelling to 8th grade low achievers whether played on one occasion or on three occasions. Because of the clear preference for a group structured game established by the mathematics game experiment, only a group version of the Spelling game was tried.

This game represents a within-classroom reorganization, with the teacher assuming an advisory role. Students play with partners, and there may be from one to three sets of partners on a team. It is adaptable to almost any classroom in terms of physical facilities. It is also adaptable in terms of subject-matter -- several sets of cards could be made available instead of just one (as the game was experimented with). This is a clear case of a drill task, taken over by the students themselves, with positive learning outcomes. It is hard to know how "efficient" it is because there is no very good way to compare it with teaching of the same material by other methods. Such a comparison may not be particularly relevant, however, since these students are low achievers and strongly resist learning under the usual methods of instruction, whereas they clearly are receptive to instruction in the game format.

Cross-Cultural Study of Teaching Staffs. Another project (#12) has gathered survey data on motivational status and informal social organization of teachers in the same school where the guidance-oriented program (Project 11) is being tried with low-achieving students. If possible, similar data will be gathered in Norway.[*] Since there is considerable data on motivational status of students in the same school, the inter-relationships of teachers' motives and students' motives will be compared.

---

[*] A Norweigan graduate student in the Department of Social Relations at Hopkins is participating on a voluntary basis. No funds are allocated from the program. Two contrasting forms of school organization are characteristic of the U.S.A. and Norway: (1) in the U. S. teachers in junior high and high schools are generally organized along department line; i.e., the organizational emphasis is on subject-matter specialty; (2) in Norway the emphasis is on student groupings rather than subject matter, and teachers meet not along department lines but in groups determined by the fact that all teach in common a particular set of students. Such groupings, or forms of social organization within the school, may have very different effects on a teacher's view of his role and particularly on a teacher's empathy for his students.

Data have been collected from 69 teachers and partly analyzed. Teachers were given need Achievement and curiosity instruments (fantasy-based) like those given students, but as was true for students, the reliability of these instruments (approximately .20) is too low to warrant further analysis of these data. The Minnesota Teacher Attitude Inventory (MTAI) measures, among other things, empathy with students. It is being subjected to an item analysis to point up differences among teachers. Analyses of total scores on the MTAI do not seem to point to any differences in empathic status stemming from the organizational innovations involved in the guidance-oriented program. The sociometric ratings similarly negate effects on teachers of the organizational changes. What the sociometric analysis does indicate is a very pronounced splitting of the teachers along sex lines -- men wish to deal with men, socially and professionally, and women also prefer in most instances to deal with men. The McKeachie Classroom Climate ratings (Project 11) will shed further light on student-teacher relations, but results on this are not yet available. Further analysis of results, particularly with a view toward providing a shortened version of the MTAI (now 150 items with 5 alternatives each), and other student data remain to be carried out.

This project studies teacher organization, a matter usually considered only in terms of administrative goals. This project suggests that possible benefits from one kind of staff reorganization that is easy to implement, such as a guidance oriented program, probably does little to alter the social structuring of teachers that occurs "naturally"; that is, along sex lines. It also suggests that subject-matter organization may also have little impact. What counts most are demographic characteristics -- age and sex.

Johns Hopkins Project for Disadvantaged High School Students. For the past two years (1967-69) the Johns Hopkins University has conducted a program designed to stimulate a group of 50 disadvantaged boys (ages 15 to 17) to higher levels of academic achievement than they might normally be expected to attain. This group of boys, nominated by their high school teachers and counselors, received intensive academic tutoring during the summer of 1967 and 1968. They also met on a more informal basis at Hopkins two Saturdays per month during the normal academic year. A study of some of the effects of this pilot program has been undertaken by persons not directly associated with it (i.e., personnel of the Socialization and Cognitive Style Program). No provision was made for serious evaluation in the original design of the pilot program. Similar projects are underway at many schools around the country. The project also has important resemblances to the guidance-oriented program described under Project 11. Thus, development of a set of procedures for evaluating the effects of such programs is a highly useful undertaking.

The Hopkins remedial program is an important example of a modification in the social organization of schools to meet a current educational need. In effect, a higher educational facility (the University) is providing for a kind of socialization notably absent from the homes of disadvantaged blacks. The "hidden curriculum" of the middle class home is being explicitly presented to lower class youngsters. Obviously, a number of questions can be asked about such programs, the first and most important being whether they exert any effect at all.

The evaluation involves two stages. In the first stage, students in the pilot program will be compared with a closely matched sample of boys with regard to their attitudes toward school. A measuring instrument has been especially devised to make this comparison (also adapted for use in Project 11). The pilot program was designed to change the students' attitudes toward school. Attitudes toward school, it is reasoned, could be seen as varying along 3 dimensions: (1) like-dislike, (2) useful-useless, (3) accessible-not accessible. A semantic differential instrument was developed to measure changes along these three lines in a subtle but reliable fashion.

The second stage of the evaluation concerns predicting which of the boys in the program have profited most, and which least, from tutorial experience. To make this evaluation, each of the boys was given the California Psychological Inventory (CPI). Meanwhile, members of the pilot program staff were asked to rate the boys in terms of their potential for continuing school. (These ratings were highly reliable -- r=.92). A regression analysis was conducted using 19 scales from the CPI to identify those students who have profited most.

Preliminary analyses show that the program had a clear-cut impact on attitudes of students, and the change was in the desired direction. The CPI data suggest positive findings in that part of the evaluation also. Data from the semantic differential indicate that this instrument worked very much as intended. More important, the pilot program boys had a significantly more positive attitude toward school at the end of the program than did the matched sample.

The regression analysis is also highly significant. A stepwise repression equation was developed (multiple r=.64, $p<.01$) which indicated that the boys in the sample with the greatest potential for continuing their education were characterized by social self-confidence, a well-developed sense of personal responsibility, achievement motivation, and social acuity or insight.

Information is now available concerning college attendance of the pilot program boys. Analyses will be performed using the "attending college--not attending" dichotomy. The colleges chosen can also be ranked for level of difficulty, and this ranking can be treated as a criterion variable for additional analyses. Finally, the semantic differential instrument was also used in the junior high school project, with low-achieving white middle class students. These data will be used in connection with the information on the Hopkins pilot program to examine race differences in addition to the other comparisons made.

A preliminary report of this research has been written, and a revised report should be finished by the end of the summer of 1969.

PROGRAM IV: A PROGRAM FOR THE STUDY OF STANDARD LANGUAGE ACQUISITION IN EDUCATIONALLY DISADVANTAGED CHILDREN

Overview

This program focuses on a problem area which has received considerable attention from educators and researchers and can be broadly identified as "the language of the disadvantaged child." The problem arises from the divergence or difference between the first language of the child and the language of the school which he attends. In some cases, the differences may be quite clear-cut as when an Indian, Puerto-Rican, or Mexican-American child enters a school in which the language of instruction, English, is to him a foreign language. The need for provision of bi-lingual and bi-cultural instruction has by no means been adequately met, but the problem is now widely recognized. In other cases (of more direct concern to this program), the child's language may be a variety of English, often loosely identified with ethnic or social class membership, which differs in some respects from the language of instruction. The definition and remediation of this latter situation has been the subject of an increasing amount of discussion and research within the last several years. Three review articles (Brottman, 1968; Cazden, 1966; and Raph, 1965) and a brief bibliography (Shuy, 1968) indicate the rather disparate approaches to this problem area which range from emphasis on the dimensions of cultural and cognitive or verbal deprivation to emphasis on the description of subcultural or sub-group differences. On the one hand, the problem is set in a field of experiential deprivation in which the child from a disadvantaged environment is viewed as deficient in respect to cognitive development requisite to school achievement, where language development is viewed as a dimension of cognitive development (Deutsch, 1963). On the other hand, the problem of school performance is viewed as caused by specific skill deficits, such as comprehension and production of language and verbal reasoning skills (Bereiter and Englemann, 1966). Finally, the problem is set in the field of subcultural differences. The child in question is viewed, not as deficient, but as different. He is regarded as a member of a community who has learned the linguistic and cultural behavior modeled and accepted by that community (Labov, 1969; and Stewart, 1964). The problem lies then in the discrepancy between the language, objectives, and norms of the (supposedly) middle-class oriented school and the language values and modes of interaction of the lower-class child who, in most of the research alluded to, is a resident of a black urban ghetto.

This program builds on the following assumptions.

(1) A significant portion of the observed deficit in cognitive and verbal functioning is a direct or indirect result of difference in the child's language system and the standard English used by the schools in instruction and in evaluation.

(2) A descriptive account of the speech and the use of language in the subject population is essential to the design of any strategy for remediation, "remediation" here being used to mean the provision of training in the standard language, which is apparently requisite to school achievement.

A further assumption is that any strategy of remediation must be a complex one, taking into account the content of instruction, instructional techniques, and configurations of communication within and beyond the classroom.

The objectives of this program are immediately relevant to that aspect of the Center's focus concerned with the development of innovations in curriculum based on the effect of social influences on the learning process. The program relates directly to the study of subcultural differences in socialization and cognitive skills conducted under the Cognitive Styles Program described earlier. Furthermore, the efforts of the Program to develop techniques for maintaining standard language performance under conditions approximating real language use relates to the procedures and objectives of Program I, Simulation Games. During the past year, cooperation and interaction with these programs have steadily increased.

The major objective of this program is to develop a training program in spoken, standard English for a defined subject population. The training program is designed for use in late elementary school. The first level of the program focuses primarily on the form of standard English. The second level will focus on the use of standard English in tasks requiring information exchange.

However, children generally do not learn a language in the classroom, but come to the classroom with an already well-formed spoken language. In response to the emphasis of the curriculum, some may learn to read, spell, punctuate and to state or recognize formal rules of grammar. The likelihood of their acquiring such skills and of developing increasingly adult language is high only if the subject matter of the curriculum and the language of instruction build on the language they bring to the classroom. If, as in the case of the speaker of a divergent dialect, there is marked discontinuity, little progress can be expected. If the discontinuity is to be bridged, intensive training is required. This program employs individualized instruction in an attempt to provide more intensive instruction. The major work of this program is devoted to this objective. The several activities that are directed to this objective are linguistic description of the children's first language, programming research, and the developmental work on the design, production and evaluation of the instructional materials.

If evidence from the program's experience with classroom observations is representative, there is little opportunity in the classroom as it is presently organized for children to practice or to develop skills in the use of language. The development of a style of speech generally used for the exchange of information, for "problem-solving" in a social setting, and for task-oriented activities (a style of speech which has been described as "consultative") may, indeed, be a product of the "hidden curriculum in the middle-class home." For the lower-class ghetto child, the development of such speech is not facilitated, either at home or in the schools. Both this program and the Cognitive Style Program described in the immediately preceding section are concerned with the introduction of procedures, materials, and organizational modifications in the classroom that may help to remedy this situation. The provision in the classroom for the exercise of this style in standard English code is conceived as a necessary step in the training program both for maintaining acquired skills in standard English and for extending the usefulness of these skills. In this program, research on simulation games and on performance on a communication task are directed toward this aspect of the problem.

The program began officially in September, 1967. Its initial progress was rather slow because staffing was not completed until August, 1968. Work conducted during the early period, however, did provide the necessary basis for rapid program development by furnishing data on the speech of the subject population and by developing sites and contacts for research and development activities. Thus this period produced a background of field work experience with the subject population and provided an opportunity to review and clarify the problem area, the definition of which now underlies the program activities.

The period of time covered by the present report represents an important step toward accomplishing the objectives of the program.

The major work of the program began in September, 1968, when the staff was considerably expanded. During the reporting period, staff activities were apportioned among the five interrelated projects. The following reports on these projects vary in length. Greater detail is devoted to those activities which have not been previously reported in other publications. In particular, the description of the developmental work (the core of the program) is rather extensive. Since all other projects feed directly into this project, it is felt that a detailed description is necessary in order to show the function of the other projects.

Linguistic Research

The objectives of this project are twofold. The first is the preparation of a linguistic description of Baltimore, non-standard, Negro English (hereafter denoted by the initials BNNE). Such basic linguistic work is not only essential to the developmental work of the program, but is of considerable interest to that area of sociolinguistics which is concerned with the form and social functioning of various dialects. A growing body of research is now becoming available as lower-class, Negro speech is being studied in several large urban areas. Several of these published reports are as follows: on New York (Labov, et al., 1968); on Detroit (Shuy, Wolfram, and Riley, 1967, and Wolfram, 1969); on Washington, D. C. (Loman, 1967) and on Chicago (Pederson, 1965).

The second objective of this project is the specification of the linguistic content of the instructional programs. Not only the selection of content, but the ordering and emphasis of instruction depend heavily on an adequate knowledge of the speech of the subject population and the systematic contrasts that this speech shows with standard English, the target language of the instructional program.

The object of study has been the linguistics system of BNNE. The linguistic units, their internal structure and arrangement comprise the code of BNNE. A linguistic code is used by its speakers in a variety of social situations. Different selections of features from the code seem to be influenced by specific combinations of factors in the social situation. The selections from the code may involve grammatical constructions, lexical items, or phonological patterns. Factors of the social situation refer to such aspects as who is speaking and to whom (status, age, and sex), what is being discussed or talked about, the task or objective of the conversation, and the setting. Where a preponderance of code selections systematically coincides with a certain grouping of social factors, there exists a language style.

The speaker of any language code selects, arranges, and emphasizes certain code features to fulfill a given culturally-defined linguistic task. In the collection of the corpus, various speech situations were sampled in an attempt to identify the relatively constant features of the BNNE code. Further examination of the distribution of variants among speech situations is being carried out to identify language styles utilized by the BNNE speaker.

This linguistics research involves three phases. First, the data on the subject populations were collected using several elicitation techniques. Secondly, an analytical framework was developed in which statements could be presented on these data and on the contrasting Standard English data. Thirdly, the data were further analyzed and ordered as components of the content for the instructional program.

(1) Corpus and Elicitation Techniques. The initial linguistic data consisted of the conversations of 10-12 year old boys recorded

during the spring and summer of 1968. The recordings were made in various Community Action Agencies (CAA) throughout the inner-city area of Baltimore.* The task in which the boys were involved was game-playing. The particular game which they played most often was Parent-Child,** one of those in the repertory of the Simulation Games Program. The game requires a certain amount of linguistic activity on the part of the children in order to bargain with the other players and get points. In addition to the task of game-playing, the sessions permitted spontaneous conversational interchanges among the children.

The linguistic output from this elicitation technique provided a corpus of speech from fourteen boys in the fifth grade taken over a period of eight months. There were nineteen tape recordings made of the games sessions, each of which comprised about 1.5 hours of recording. Three early tapes were excluded from the corpus since these sessions included the monitor's explanations of the game. The remaining tapes contain little monitor intervention and represent sessions in which the children were relaxed and accustomed to the tape recorder. The advantage of this elicitation technique is that many of the same children carried out the same task repeatedly in sessions which were spaced over an extended period of time. The resulting speech samples could be checked for consistency by comparing the speech of the same child over time.

---

* The areas were selected on the basis of 1960 census data and on a 1964 Baltimore City report.

** McFarlane, Paul T., Pilot Studies of Role Behaviors in a Parent-Child Simulation Game. Report #39, Center for the Study of the Social Organization of Schools and the Learning Process, The Johns Hopkins University, February, 1969.

A second elicitation technique which was employed was direct elicitation. The technique was first used to elicit previously observed grammatical constructions from several of the same boys who had played the games. Data thus elicited required careful evaluation and comparison with other data since responses tend to be non-spontaneous and frequently subject to normative restructuring on the part of the children.

The third technique which was utilized was the eliciting of linguistic data in a variety of connected discourse. The two topics of greatest value in this framework were telling about a TV show which the child had seen recently and describing how to play neighborhood games. Three of the boys who participated in the games and the direct elicitations, as well as fourteen other fifth-grade Negro boys and girls, produced samples of connected discourse.

The recounting of a television show or story and the description of a familiar game proved to be fruitful for obtaining an expanded sample of speech containing a variety of clause types. This framework provided a large volume of data on the verb system of BNNE. The task placed demands on the speaker to convey to a listener a succession of related events. This required a utilization of the verb tense-aspect-voice subsystems of BNNE. Confidence in the reliability of the data from the earlier games sessions was strengthened by the large amount of overlap of grammatical constructions and processes in these story-telling and descriptive sessions.

A fourth corpus of data was obtained from the recordings of the group session of a school psychologist. These tapes contain about three hours of continuous personal narrative which also show a very large overlap with the other corpora.

(2) Analytical Framework. From September to June, 1969, an overall descriptive framework for presenting the structural information about

the BNNE code was worked out.

The analysis proceeded from texts (the transcribed record of an elicitation session). Within a given text, there are smaller functional units; for example, a question-answer interchange, or an embedded narrative in a conversation, or a series of related insults (a form of verbal gaming). The structural features of such higher order units (relative to primary linguistic units) have not yet been examined, but there is reason to believe that some internal structures are present (characterized by both form and content). The internal structure of the spoken narrative has been examined by Labov (1966), and for written material the structure of the paragraph has been analyzed (Koen, Becker and Young, 1969).

The present analysis, however, reaches only from the sentence level to the structural configuration of morphemes. The key unit for describing the structure of the BNNE code is the clause. The clause is the central unit on which the analysis depends.[*]

Clauses combine in various ways to form clause complexes (sentences). Clauses are also analyzed into major components called phrases. The phrases exhibit certain functions in the clauses, and are said to occupy functional slots. Phrases themselves are made up of smaller units whose form is described in the morphology section of the description.

---

[*] Clause as used here has been described by Gleason (1965, p. 299) as follows: "A clause contains a subject, a verbal phrase (perhaps a single word), and sometimes one or more complements."

BNNE may differ from standard English (SE) at any level of the description. These differences may be attributed to different principles of selection or arrangement of the above-mentioned units of linguistic form. The points of difference are of interest and are significant in designing instructional materials, but they are not adequate to characterize the internal structure of BNNE. The structure of BNNE can only be observed by determining the internal relationships of the units and describing them. When the internal functioning of BNNE is more fully described, the differences between BNNE and SE can be more fully understood. This objective will be pursued for a forthcoming Center report to be completed in September, 1969.

The BNNE code will be presented in a traditional structural linguistic framework, although grammar (as contrasted to phonology) will be the major focus of this description. In the selection and arrangement of phonological units BNNE does, of course, differ from SE. A simple example of differing selection is the following. Although BNNE and SE phonology both have a voiceless labiodental fricative [θ] in certain lexical items: BNNE "bof," SE "both;" BNNE "birfday," SE birthday. An example of differing arrangement is the BNNE "aks" [aeks] corresponding to SE "ask." But, in addition to such relatively restricted aspects of the phonology, there are systematic phonological rules which operate in wider contexts, frequently intersecting with grammatical constructions. An example of such a rule is the reduction of word final consonants and consonant sequences as in BNNE "firs," "curse," "han" [hæ] (SE "first," "cursed," "hand"). Such modification in phonetic shape may effect grammatical markers as in the loss of the past-tense marker in the above example, "curse(d)."

The structure of English can be visualized as a hierarchy of constructions. At the base are structural units which are combined to form larger units (fused units).* The larger units are in turn combined by various means to form still larger units. This hierarchy principle may yield a different number of levels for different languages. The number of levels which seems satisfactory to describe English is five although, as with the description of any natural or social phenomenon, there are always problems with borderline examples. The levels are as follows:

(a) Morphemic units: The most basic level of form-meaning covariance.

(b) Word units: Lowest level of fused units (Det., N., Adj., Adv., Vb.).

(c) Phrase units: NP, VP, Adj. Ph., Adv. Ph., Prep. Ph.

(d) Clause units: There are sixteen basic types of clauses.

(e) Sentences (clause complexes).

The presentation begins with a discussion of the basic structural features exhibiting covariance of form and meaning, i.e., morphemes. Next follows a description of the smaller fused units in BNNE. These units have been traditionally labelled "form classes" in English. The next level of the description deals with a higher level of fused unit, the various types of phrases in BNNE. Next, the clause types are classified and discussed. Finally, sentences are classified. The working definition of "sentence" is: A linguistically complex unit which is composed of two or more clauses fused into a single structure. Five types of major fusion processes have thus far been identified.

---

* For a discussion of "fused units" see Garvin (1964, pp. 7-11).

(3) Integration of Content into Instructional Program. While the overall sketch of the BNNE code was being formulated, work was begun on the selection and ordering of the linguistic content of the instructional program. Initial selection of content was based on degree of structural difference between BNNE and SE and the relative importance of this difference in the composition of higher order units. Ordering of content attempted to take into account the complexity of the linguistic structure and the difficulty as inferred from a comparison of the BNNE and SE structures and from an analysis of the form and distribution of the competing BNNE structure or structures. Since many properties of the noun phrase are independent of conditioning from other elements of the clause, the noun phrase was chosen as the first topic of instruction. Some properties of the noun phrase could then be ordered to reflect structural prerequisites (on a scale from simple to more complex) to the production

of noun phrases in SE.

A brief description of the lesson content (Modules 3-6) follows:

(a) The BNNE indefinite article has only one form, "a," while SE has two alternants, "a" and "an," e.g.:

I ain't got a six.

I'm waiting for a answer.

(b) Consonant clusters in word-final position have a strong tendency toward reduction. The clusters -sk, -st, -sp, -ft, for example, are often simplified by BNNE speakers to -s, or -f, respectively, e.g.:

SE	"mask"	BNNE	"mas"
	"raft"		"raf"

This particular phonological aspect of BNNE is crucial to the formation of noun plurals in SE. Production practice on word-final consonant clusters thus precedes noun plural formation. (This aspect of the phonology is, of course, also critical in the production of possessive noun, of third, singular, present-tense verbs, and of many past-tense verbs--all the topic of subsequent lessons.)

(c) As a result of the simplification of word-final consonant clusters and of the generalization of some rules for the signification of the plural, the noun plural formation in BNNE is at times quite disparate from the SE formation. To all appearances the BNNE rules for phonologically-conditioned plural variants seem to be the same as those for SE. The actual forms of the plurals of phonologically-conditioned forms may be different, however, because of different base forms. Following is one example of BNNE noun plural formation:

BNNE *sg*. "des" [dɛs], *pl*. "des'es" [dɛsɨz]
or
"des" [dɛs:]

These plurals are formed on analogy with either one of two principles which are used in SE. The *BNNE* plural of "desk" is formed analogously to *SE* "rose-roses" for the first variant, and analogously to *SE* "moose-moose" for the second variant.

The content described under a-c is a sample of Modules 3-6 of the instructional program. The content described under d-g will be the basis for the construction of Modules 7-10.

(d) There is an aspect of the phonology of BNNE which is of some importance in the social stratification of spoken English. The feature is the various BNNE correspondences to the SE phonemes /ð/ and /θ/. These sounds, though present in the BNNE phonological inventory, are subject to replacement primarily in word-initial positions as in the determiner class. Most commonly, the [ð] is assimilated to the preceding word-final consonant, or else lost:

"You hafta clean up the hou*se* *th*is week." [haws *s*Is]

"I know what every last o*ne* *th*em numbers is." [wan *n*ɛm]

Substitution also occurs for /ð/ and /θ/ in certain lexical items, both in word-medial as well as in word-final position:

"mother" /məvə/ "both" /bowf/

(e) The class of determiners which is in SE "this-that, these-those" is slightly different in BNNE. Instead of "those" in the attributive position in a noun phrase, BNNE speakers commonly use "them" as in the following example:

"Where them cards I gave you?"

(f) BNNE speakers often do not mark a noun for possessive function as do speakers of SE. Where SE speakers add the possessive morpheme [Z] /-z, -s, or 0/ for "John's hat," "Pete's hat," and "Mr. Jones' hat," respectively, BNNE speakers commonly omit any suffixed marker of possession, the construction being marked by word order and possibly intonation.

I almost busted that boy head.

Will Sonnett father an' them, they was—, somebody told
that their father got shot.

(g) The pronoun system is not radically different in phonological shape. The differences come primarily in the possessive forms of the pronouns: "your" [yo] or [yoɚ], "her" [hɚ] or [hoe], "our" [ɒ:], and "their" [đɛy] or [đɛɚ]. One other infrequent variant is [maynz] for "mine."

Related to the pronoun system is the structure of the compound noun phrase when at least one of the constituents is a pronoun. The pronoun constituent of such a phrase is invariably the object form, and the first person pronoun usually precedes the non-first person noun or pronoun:

> "So he put Fred and Barney and his wife an' them up to the moon."
>
> "When they leave, me and you gonna play."

The shape and distribution of reflexive pronouns comprise the content of another lesson. Frequent BNNE forms are illustrated below:

> "Well, you let him talk for hisself."
>
> "I'm gonna get me a Oriole hat, too."
>
> "You better go buy you some clothes, boy."

The preceding topics are the content of the first phase of the instructional program. The second phase focuses on the verb system. The third phase focuses on clause structures, and on those processes which relate the verb phrase and noun phrases, e.g., negation, interrogative clauses with question-words and/or inversion.

Direction of Future Work. The analysis of BNNE is continuing. A Center report containing a description of the BNNE code and a detailed study of a grammatical sub-system of BNNE is planned for the third quarter of 1969. Further work with the present corpus and collection of new samples will be carried out in an attempt to study style differentiation within the BNNE code. At the same time, the specification of lesson content will continue for phases two and three.

Modification of a Simulation Game for the Purpose of Investigating Role Perceptions and Language Behavior of Educationally Dis-Advantaged Baltimore City School Children

The original objective of this project was to study, describe and measure the role perceptions of inner city elementary school children through the use of a simluation game, Parent-Child. It was believed that this game would provide a research setting which would allow the investigator access to types of data not available by other means, i.e., behavioral data which is role-related, in contrast to the more usual attitudinal or self-reported behavioral data.

In addition, this project was designed to provide the project on Linguistic Research with a corpus of linguistic behavior. The tape-recorded game sessions represent an extensive record of the speech of twenty subjects as they played the game and conversed on various non-game topics. In connection with this objective, it was also thought that some differentiation of speech by assumed role might appear as the players achieved facility in the play of the game.

A complete description of the research carried out in July-September 1968 can be found in Center Report #39, Pilot Studies of Role Behaviors in a Parent-Child Simulation Game. The major result of this work is that although there was inter-role variation in the way the subjects played the game, the inter-racial differences (and perhaps the inter-class differences) in the subjects' game play were much more important and much more deserving of further investigation.

With respect to linguistic analyses and results, no association could be found between any linguistic variable (e.g., total verbal output, number of questions, number of descriptive adjectives, number of adjectives over total number of words) and the role played by the subject that was statistically significant and/or meaningful theoretically. It was felt that the small number of individuals might be responsible for this lack of results, in that personal styles could outweigh role-specific styles.

The strong differences between racial groups with respect to behavior in the simulation game is thus the major result of this research, and as such will be studied further. Not having accomplished the original objectives, this project was terminated as of June 30, 1969.

However, the results of this project will be used by the principal investigator as a basis for further research resulting in a doctoral dissertation. At least two versions of the Parent-Child simulation game will be administered to at least four groups of subjects differing in racial and social class dimensions. Various behavioral and attitudinal data will be recorded and analyzed, using the techniques developed in the previous research. Neither the final design nor the sampling procedure have been decided upon. This dissertation research will be carried out under the joint auspices of this Program and the Simulation Games Project.

The results of the planned research should provide answers to questions concerning such areas as class and racial differences in perceived styles of socialization, behavior under different conditions of reward and punishment, and various other social psychological areas involved in the research. In addition, the work will demonstrate the utility of the simulation game as a methodological tool which can provide data of a type not accessible by other research techniques.

Design and Development of a Self-Instructional Program in Standard English

The objective of the project is to develop and evaluate a self-instructional program in spoken standard English for fifth and sixth-grade students who are speakers of a non-standard dialect of English.

Several important characteristics of the program will first be described which relate the rationale and approach to specific attributes of the program (to be taken up in detail below).

(1) The program is designed for a specific student population. The program should thus be considered a prototype program tailored to the needs of a certain group of school children which would, following evaluation, be adaptable to other groups by means of specific changes in content, instructional emphasis, and, to some extent, programming and presentation techniques.

The present target population is fifth-grade, Negro, inner-city school children. The major characteristics of this population which the program takes into account are: (a) the linguistic code as manifested in different functional or situational styles used by the children; (b) the general level of reading ability; (c) topics of interest or familiarity with areas of content; (d) such learning characteristics as effect presentation and program design features. These population characteristics are empirically derived, in the case of _a_, _b_, and _c_ by preliminary research and inquiry, and in the case of _d_, by observation and analysis of student performance on early versions of the program.

(2) The program is self-instructional and the materials are presented individually. For purposes of research this format considerably enhances the possibility of evaluating the instructional content and many components of the presentation, since input to the student is constant and responses to each step of instruction can be observed and recorded. Thus, through successive revisions, the program can be more effectively adapted to the student population. From the point of view of developing an effective instructional system, the programmed self-instructional format employed offers the following advantages:

(a) The opportunity for intensive instruction as measured by the number of stimulus items presented and the number of responses produced per student in a given period of time;

(b) Some accommodation to individual learning strategies and individual needs for repeated auditions;

(c) The provision of corrections or confirmations to the individual student's responses;

(d) The provision of a constant and consistent model;

(e) The opportunity to present contrasting features of standard and non-standard codes. This feature is essential to the instructional approach, but the capability could not be assumed for an untrained teacher.

(3) The spoken standard English which is the target language is presented as a variety of speech appropriate to certain situations. It is contrasted on specific dimensions, mainly grammatical, to the non-standard code which has been derived from descriptive linguistic analysis. The situations in which one code or the other is labelled appropriate vary on dimensions of age and relationship of speakers, physical setting, and topic. Responses in both codes are produced as appropriate by the student as the situation requires.

(4) The structure of the program is cyclical rather than purely linear. In other words, content and skills are ordered to build toward specified objectives, but are progressively reintegrated into larger blocks of content and into more complex skills. For example, production of word final consonant clusters is

subject to drill in Modules 4 and 5. Noun plural forms are also introduced there as the context for production of the consonant clusters. In Module 6, the emphasis of instruction is the production of the different classes of noun plurals. Thus, final consonant clusters are reviewed and produced in a different context. In a later module, production of third-person singular, present-tense verb forms and certain past-tense verb forms will require review and further integration of word final consonant clusters into complex speech behavior. Similarly, as a grammatical feature is introduced, the differences between Baltimore, Negro, non-standard English and standard English in respect to that feature are labelled as "Casual" or "Formal." Modules will be interspersed in the sequence of instruction to provide practice on producing equivalent messages in one or the other code. These modules will require review of preceding grammatical elements, but the student will have to integrate the previous grammatical training into appropriate use of grammatical form when switching from casual to formal, or formal to casual speech.

Input to the development and evaluation of the instructional program comes not only from other published linguistic, educational and psychological research and from other on-going research projects within this program and in the Center, but also from the views and comments of teachers and school administrators who have discussed this problem area with the staff and have reacted to demonstrations of the programmed materials.

Description of the Instructional Program

(1) Content. Only a small fraction of the projected linguistic content for the fifth-grade level of the program is represented in the first six lessions, which have been the subject of a recent evaluation. Following a program familiarization sequence of two lessons, the remaining four lessons concern properties of the noun phrase. The content of the first six lessons (modules) is as follows:

Module 1: Introduction to the concept of language variation. Languages differ (Chinese, Spanish, English); regional or geographical varieties exist within one language, as do features linked with characteristics of the speakers such as age. This information is presented in such a way as to accomplish the major objective of Module 1, i.e., to familiarize the student with the operation of the equipment and the different instructional modes. (See Section 3 below.)

Module 2: Messages may have similar meaning but show a difference in form. Two varieties of English, "Formal" and "Casual," are identified and linked to situations. Specific utterances are identified as "appropriate" or "inappropriate" to a situation. The content samples from a number of salient differences between standard and non-standard speech (always the Baltimore, Negro, non-standard English [BNNE] occurrent in the age group of the student).

Module 3: Differentiation of the indefinite article into the two conditioned alternants, a and an and the use of these in noun phrases; e.g., a Russian astronaut, an American astronaut.

Modules 4 and 5: Word final consonants and consonant clusters which are subject to reduction in BNNE and which underlie formation of standard English noun plurals; e.g., -st, -sts (guest, guests); -l, -lt, -lts (coal, colt, colts).

Module 6: Regular noun plurals are reviewed and sub-groups of irregular nouns, which have different members in BNNE and standard English (SE); e.g., BNNE "foots," SE "feet"; BNNE "mouses," SE "mice," are presented.

The content of modules 7-10, now in production, focuses on other aspects of the noun phrase: 7, the plural definite determiner; 8, the possessive noun construction; 9, the possessive interrogative determiner; and 10, the pronoun system, especially compound subjects.

(2) Lesson format. Each module reflects the analysis of behavioral objectives of that module. In general, a module has several sequences which build toward a terminal objective. Each sequence is constructed of tasks which contribute to the objective of the sequence. Tasks are composed of individual frames. Each sequence as well as the module itself is terminated with criterion frames, i.e., frames that test the accomplishment of the objectives.

This structure forms a general guideline for the specification of objectives. The linguistic content is ordered in increasing complexity and according to structural prerequisites (e.g., the production of many noun plurals presupposes the ability to produce the consonant clusters arising from addition of an allomorph of the regular plural marker). However, the design for a lesson must specify the behaviors to be taught and the conditions under which the behaviors are elicited. For example, the objective of Module 3 is the production of a or an elicited under the following conditions:

(a) Given a sentence with an indefinite article preceding a consonant-initial (or a vowel-initial) word, substitute a vowel-initial (or consonant-initial) word and say the sentence using the appropriate form of the indefinite article.

(b) Given a picture, say: "That's a ________," or, "That's an ________."

Two sequences lead to this behavior. The objective of the first sequence is for the student, after hearing a noun and seeing the written words a and an, to choose the correct form of the indefinite article and repeat the phrase; e.g., he hears "onion," chooses an, hears "an onion" as a confirmation, then repeats "an onion." (Tasks preceding this sequence include discriminating between a and an and discriminating between words with vowel-initial and consonant-initial sounds under a variety of stimulus conditions.)

The objective of the second sequence is for the student, after hearing a noun phrase with no indefinite article, to add the appropriate form of the indefinite article and say the phrase; e.g., he hears "open door" and says "an open door." Tasks preceding this sequence involve the production of noun phrases with indefinite articles under gradually more difficult eliciting conditions. One of these conditions, which illustrates the "spiral" nature of the program mentioned earlier, is for the student, after hearing a noun phrase in casual speech, to produce that phrase in formal speech. Thus, he hears "a ambulance" and instructions to change it to formal speech, and says, "an ambulance."

The format of each lesson may differ with the analysis of the objective depending on the content and the terminal behavior objective. The following components may be required: (a) introduction or differentiation of a grammatical concept; (b) preliminary auditory discrimination training, within standard English or between SE and BNNE; (c) association of auditory elements with visual symbols; and (d) step-wise production training or production practice.

(3) Modes of student-program interaction. In all, 31 modes, or arrangements of features of student-program interaction, are employed. These fall into four major categories:

(a) Presentation modes (3) in which auditory, visual or auditory and visual material is presented to the student and no overt discriminatory or production response is required.

(b) Production modes (8) in which the student is required to speak. These modes present a visual or auditory model, with or without an auditory confirmation. In the 4 modes in which two production responses are required, a visual or auditory model is presented, then an auditory confirmation and model for the required response, with or without an auditory confirmation of the second response, is played.

(c) Visual discrimination modes (10). In these modes the student makes a discriminatory response to one of two or three visual alternatives (which may be pictures or written material). The response is made on the basis of a visual or auditory sample. These modes may present a correction following on an incorrect choice. They may also present a confirmation following a correct choice, or a confirmation and model in those 4 modes that require a production response following on a correct discriminatory response.

(d) Auditory discrimination modes (10). In these modes the student makes a discriminatory response to one of two auditory alternatives. The response is made on the basis of a visual or auditory sample. As in the visual discrimination modes, a correction may follow on an incorrect choice. A confirmation may follow a correct choice, or a correct choice and production response. A confirmation model may follow a correct choice if a production response is required.

In both the visual and auditory discrimination modes, an option to request replay of the auditory sample is available for the relevant modes. In all the auditory discrimination frames, there is also the option to request replay of one or both auditory alternatives after both have been played for the first time.

Each frame (or segment of instruction) is programmed into one of the 31 modes. Not all modes are utilized with equal frequency in any module since the specific objective of the frame determines the mode employed.

In summary, the student is presented (by means of equipment described in Section 4 below) with a frame and performs the appropriate operation. After the student's correct discriminatory response and/or production response, the frame automatically advances to the next frame. A module contains approximately 60 frames, which require from 25-30 minutes for completion. As was stated earlier, the program is entirely self-instructional, i.e., requires no teacher or monitor assistance beyond the initial aligning of the materials in the equipment.

(4) Presentation equipment and student activity. The device employed is a research model of a responsive teaching device.* The present version is composed of three units: a student console with microphone, a logic unit, and a tape recorder.

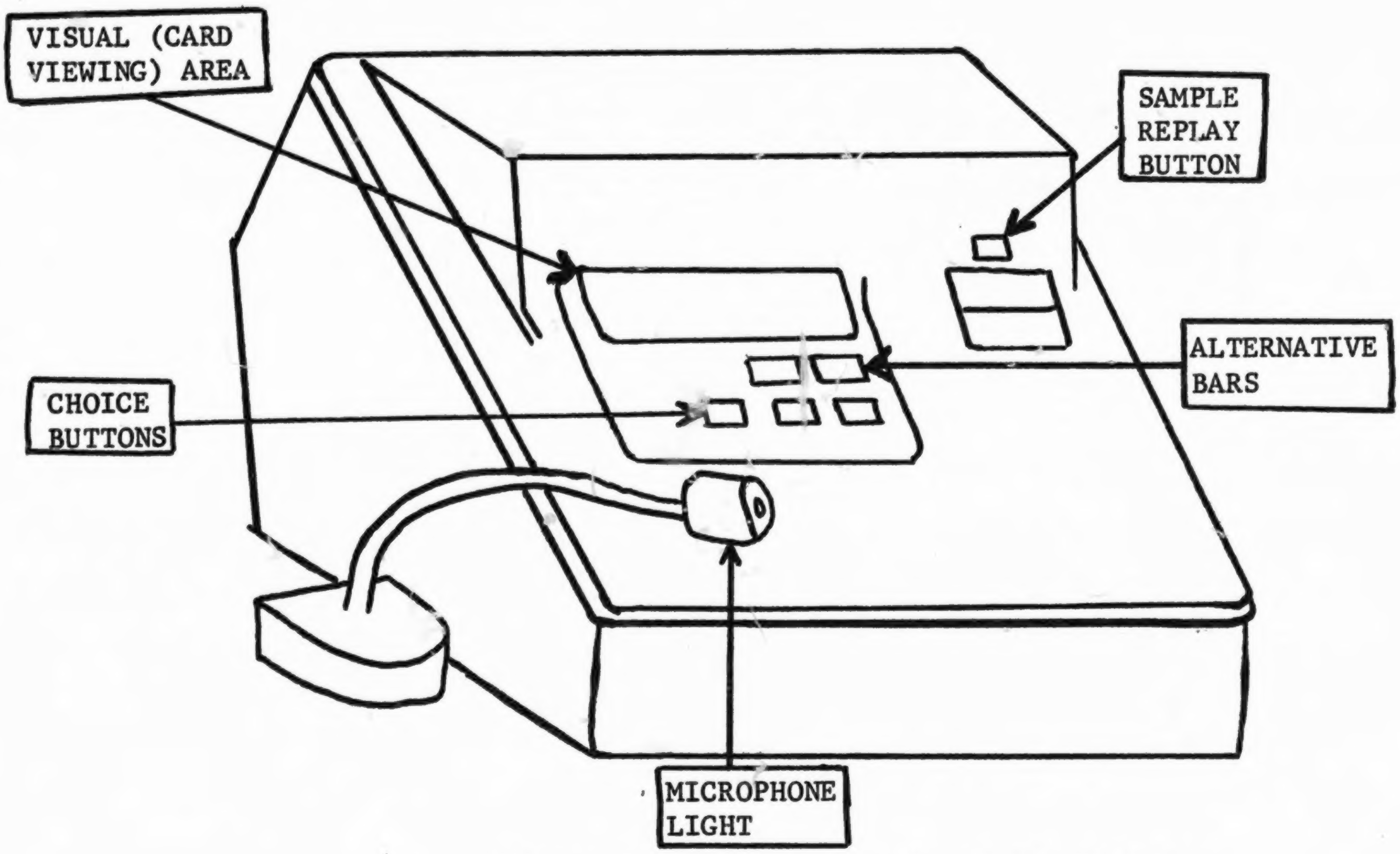

VISUAL (CARD VIEWING) AREA
SAMPLE REPLAY BUTTON
ALTERNATIVE BARS
CHOICE BUTTONS
MICROPHONE LIGHT

Figure 3. Student Console of the Portable Laboratory System

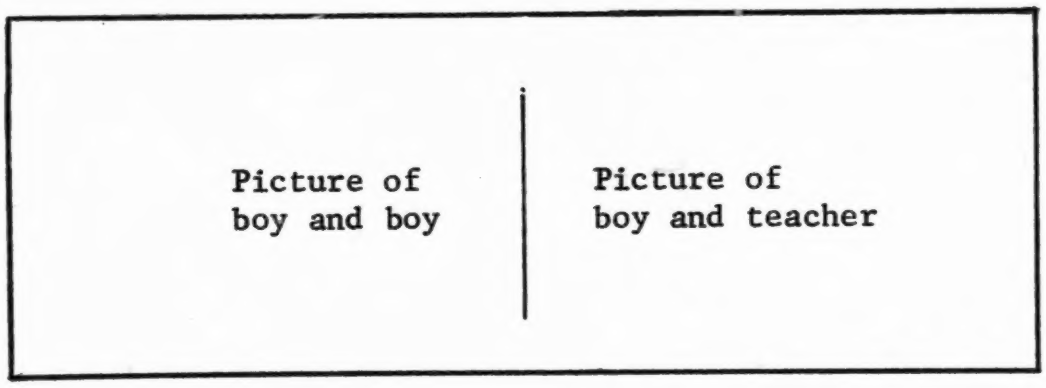
The student seated before the console sees a card (approximately 2 1/4" x 8 1/2") through a window (see Figure). Beneath the window are two bars. Beneath the bars are three buttons. To the right of the window, there is a single button. Each button and bar can be lighted; the light is the student's signal to press the bar or button. Each press activates an audio message or other signal to the student, or advances the program, depending on the programming mode of that frame. The microphone is an audio-active, voice-operated relay. It lights as a signal to the student that an oral response is required.

---

* The Portable Laboratory System, Appleton-Cenutury-Crofts, New Century, New York, New York.

A maximum of four recorded messages can be associated with the visual material presented on a given card. A card may be divided into a maximum of four sections. The arrangement of material on the card serves as a secondary signal to the student of the type of operation required in that frame.

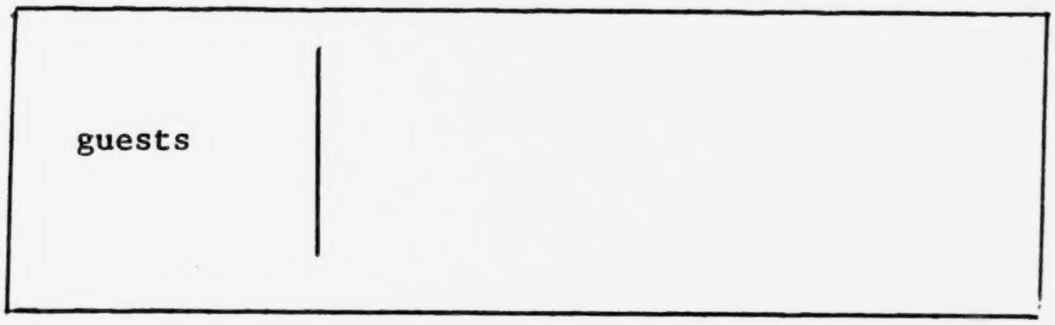
In a presentation frame, visual material is centered on the card and an audio message may play automatically:



> Auditory message: "Listen to the boy speak to his friend, and then to a teacher...'I ain't say that;' 'I didn't say that.'"

The student reads, listens or looks. He may push a button to advance the frame, or the frame will advance automatically.

In a production frame, visual material is placed in the sample area (the far left quarter of the card):

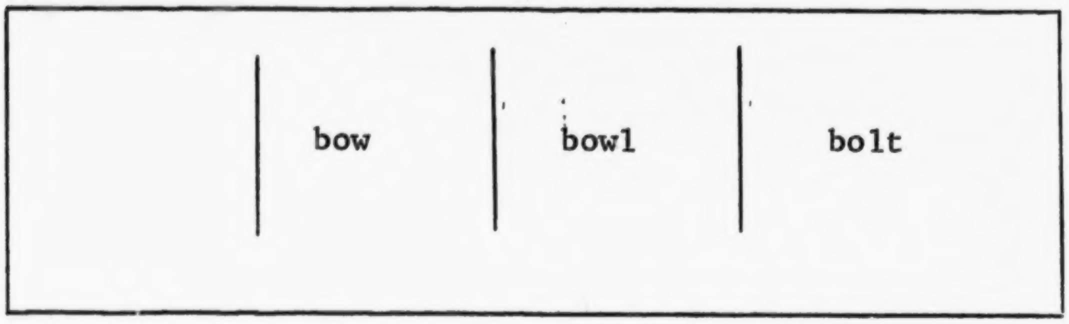


Auditory sample: "Repeat this word: 'guests.'"

The microphone light comes on, the student speaks, and the program advances. Or, after he speaks, he may hear a confirmation and the program advances. In double production frames, after the student speaks, a confirmation and model plays: "Now repeat: 'We invited two guests.'" The microphone light then comes on a second time and the student repeats again, after which the program advances.

In a visual alternative frame, two or three alternatives may be presented. The far left area is, as always, the sample area in which visual material may appear or a blank space (which signals an auditory sample). The near left area is for an instruction of a third auditory alternative. The two right areas are for alternatives:

(a) With three alternatives and auditory sample:



Auditory sample: "Which word do you hear: 'bowl?'"

If the student presses an incorrect choice button, he will hear a correction and be required to choose again. When he chooses correctly, he may hear a confirmation, and the program advances.

(b) With two alternatives and visual sample:

an ______	Choose	apple	banana

Auditory instruction: "Choose the word that goes in the blank."

In an auditory alternative frame, the sample and instruction area are to the left. Two numbers corresponding to the auditory alternatives are on the right-hand area of the card. The example below has visual sample and auditory instruction.

Picture of two boys playing	Choose	1	2

Auditory instruction: "Choose the utterance that fits the picture."

The student presses the alternative bar below 1 and hears: "Ask you muver can you go." He then presses the alternative bar below 2 and hears: "Ask your mother if you can go." (He can now replay the auditory instruction and/or either or both auditory alternatives.) If he chooses 2 (incorrect), he hears: "The boys would probably use casual speech when playing together." He now must choose again. When he chooses 1, the program advances, or, he repeats the correct alternative and the program advances.

The instructional system is thus composed of visual material, auditory material, modes of student-program interaction, and the presentation device.

(5) Production of program materials. The content and objective of each frame and its position in a task or sequence determine the mode into which it is programmed. The next step in production is the preparation of the cards and tape-recorded materials. This step was carried out by project staff with the assistance of an artist, who produced the drawings, and a bi-dialectal speaker of BNNE and Baltimore standard English, who recorded much of the auditory material. A member of the project staff performed the function of teacher's voice in the tape recordings while all messages in BNNE and pairs of messages contrasting BNNE and SE were recorded by the young, Negro, bi-dialectal speaker.

A preliminary version of each module was prepared and tested at the project's offices with four to six fifth-grade students. Each module was subsequently revised on the basis of student performance. Testing was cumulative, so that the students who tested the preliminary version of Module 4 had previously worked through

Modules 1, 2, and 3. When the six modules were tested and revised, the final version of the cards was prepared by New Century of Appleton-Century Crofts. The revised version of the tapes, however, was made at the project's office, since it was considered vital that the Negro, non-standard speech samples represent the language of the student population.

Evaluation of the Instructional Program

The objectives of the evaluation were to test the effectiveness of the programmed materials and of the instructional system in the setting for which the program was designed. A final mastery test was administered to evaluate the achievement of the objectives for Modules 2-6; continuous recording of student responses during program administration provided the other major source of information for evaluation. A proposal for the testing was submitted to the Baltimore City School System in January, 1969. Discussions with the Assistant Superintendant, Elementary Education, and the concerned area supervisors were most helpful in the selection of sites and in the preparation of the arrangements for testing in the participating schools.

(1) Procedures. Two schools were selected as appropriate sites for testing. Both were located in inner-city, predominantly black neighborhoods in which earlier research had been conducted;* thus, the existence of BNNE was attested for both sites.

---

* See Center for the Study of the Social Organization of Schools and the Learning Process Reports, #16 and #39.

With the cooperation of the principals and fifth-grade teachers in each school, twenty-four children were selected. Six boys and six girls were selected from a fifth-grade class in each school. The boys and girls were selected at random from students who had the following characteristics: (a) average reading achievement (scores ranged from 3.2 to 4.8 on the Stanford Reading Achievement Test); (b) average IQ (scores ranged from 87 to 109 on the Lorge-Thorndike Intelligence Test); and, (c) no records of excessive absences (more than four days per month) in the period January-March, 1969. In each school, then, three girls and three boys were randomly assigned to an experimental group, and three boys and three girls to a control group.

(2) Administration. Administration of the program required six days in each school, and two additional days were required for administration of the mastery test. Both schools set aside a small room in which the equipment was installed for program administration. Each student in the experimental group came to the room each day for approximately thirty minutes during which he completed one module.

A member of the project staff served as monitor, recording student responses in writing and, in the case of criterion production frames, by means of a tape recorder. The experimental group took the final mastery test on the seventh day. The control group, who had not received the program, took the mastery test on the eighth day.

(3) Analysis of results. The data consist of records of

responses made to each frame (excluding presentation frames) by the twelve children in the experimental group and the mastery test scores for the twenty-four children in the experimental and control groups. These data were processed and coded for analysis. The processing involved:

(a) Componential analysis of the frames into critical attributes. For example, a frame might have the following attributes: ± sample (auditory, visual, auditory and visual); ± instruction (auditory, visual, auditory and visual); ± alternatives (auditory or visual, if visual two or three); ± oral production response (one or two, each being ± model or confirmation). These components may be further characterized as being in formal or casual speech, and as single words, phrases, or sentences.

(b) Analysis of the occurrence and sequence of each student's optional responses (choice, correct or incorrect; replay of sample or of auditory alternatives) and of the student's oral production responses.

(c) Item scores on the mastery test.

(d) Individual student data.

At the present writing only a preliminary statement based on the results of the mastery test is available.

The mastery test consisted of 14 separate parts. Each part contained several items designed to assess the behavioral objective for one of the instructional sequences in Modules 2-6. (Sequences from Module 1 were not included since they were primarily concerned with teaching students how to operate the teaching machine.) The test was tape recorded and presented to the students individually. The student's verbal responses were tape recorded; written responses were recorded in test booklets.

Students received separate scores for each of the 14 parts. A student's score for one part was the proportion of his scoreable responses within that part which were correct. His total score was the sum of these 14 proportions.

A 2 x 2 x 15 repeated measures analysis of variance was performed on the results of the test to assess the effects and interactions of the experimental-control conditions, schools, and the 14 test parts on observed variation in test performance. Results show that the students who participated in the programmed instruction performed significantly better on the mastery test than the control group. The only other significant effect is attributable to test parts and simply indicates that some parts of the test were more difficult than others for all twenty-four students tested. The over-all effectiveness of the program is supported by the fact that there was no significant interaction between test parts and experimental conditions, i.e., no one part of the test (or one object within the program) is significantly better than any other part for discriminating between the experimental and control group. Of course, an item analysis of the test will reveal that differences between the two groups are greater on some items than others and although these items are not significantly different in their discriminating capacity, they can be used to further explore the relative effectiveness of various sequences within the program.

A more detailed analysis of results is now in progress. A technical report on this study is scheduled for publication as a Center for the Study of the Social Organization of Schools and the Learning Process report in August, 1969. A projected analysis of the effect of selected programming variables on student performance will be the subject of another paper.

Direction of Future Work. The analysis of the data gathered during the evaluation of the lessons will be completed during the third quarter of 1969, and a report will be prepared. The findings from the evaluation will be utilized for revision of the tested lessons and for modification of the design of lessons currently in the early stages of production. Production and preliminary testing of the next series of lessons will occupy the final quarter of 1969. By second quarter of fiscal year 1970, the first level of the program instruction in the grammatical form of the standard English code, should be completed. An evaluation of this product will then be scheduled, and may be expected to require several months for administration.

Programming Research

In a given language arts curriculum it is common to find a large diversity of tasks, exercises and activities combined in various ways to accomplish the objectives of a lesson or set of lessons. However, little is known about which of these activities or combinations of activities are actually effective in facilitating the acquisition of the language objectives. As a consequence, there is little systematic knowledge to guide the curriculum developer or teacher in the creation of second language instruction. The purpose of this research, therefore, is to identify instructional variables and the relationships among those variables which affect the acquisition of a second language. The specific tasks used in the research are language tasks which disadvantaged Negro children typically cannot perform. As a result, the outcomes of the research are immediately applicable to the construction of programs for teaching standard English to disadvantaged Negro children.

Description of Approach: Research Strategy. In order to insure the relevance of the research to the problem of teaching standard English to disadvantaged Negro children, the research was focused on one of the language objectives which was to be taught with programmed materials, that in the project described above, Design and Development of a Self-Instructional Program in Standard English. This objective involved the use of the indefinite article (a, an) with nouns and noun phrases.

Since the objective of the programmed materials was to affect the oral production of standard English, the research employed oral production tasks as criteria for the assessment of the instructional variables.

The first step in the research strategy was to conduct a task analysis of the criterion task of orally producing a sentence which contains an indefinite article. That is, the language abilities which were presumed to be prerequisite to the performance of this criterion task were isolated and stated. One of these prerequisite abilities was the oral production of a noun or noun phrase preceded by the appropriate form of the indefinite article in isolation from the rest of the sentence. An example of the oral production task is as follows: given the word "apple" the learner says, "an apple," and given the word "cart," the learner says "a cart." Although other abilities were suggested by the task analysis, the oral production of the noun and indefinite article was considered to be most directly related to the criterion task. Consequently, performance on the oral production task was the focus of the first experiment.

From a psychological viewpoint, the oral production of the indefinite article in a noun phrase conforms to the widely used concept formation paradigm. In the case of the use of the indefinite article, the relevant dimension along which the stimuli vary is the nature of the first phoneme in the noun or noun phrase which follows the indefinite article. The critical attributes of this dimension consist of the consonant sounds and the vowel sounds. Each of these critical attributes includes a considerable number of particular exemplars, of course. Such is the nature of the concept formation paradigm. The responses which are associated with the critical attributes are the allomorphs, *a* and *an*, of the indefinite article. Using the psychological terminology which is associated with the concept formation paradigm, the prerequisite ability may be called the oral production of instances of the concept (concept production task).

The variables which were considered to have a potent effect on the acquisition of the concept production task were (a) ability to discriminate instances and non-instances of the isolated concept; (b) ability to verbalize the rule which governs the concept; and, (c) training on the application of the rule. The first variable, i.e., the discrimination skill, has been demonstrated to be important in language tasks which are analogous to the concept production task. That is, it is known that the acquisition of the audio discrimination of phonemes facilitates the oral articulation of those same phonemes. The second variable, the learning of a rule, has been demonstrated to improve the learning and retention of certain types of concepts with college students. However, the rule has not been rigorously investigated in foreign language teaching, and it has not been treated by psychologists as an instructional variable which may improve the acquisition of concepts. Consequently, the abundant psychological literature on concept formation contains little information on the effects of rules which is applicable to the concept production task. The third variable, application of the rule, has not been adequately examined. The application process has been confounded with the presentation of rules in some research and has been totally neglected in other examinations of the instructional effects of rules.

Design and Results of the Experiment. The study was conducted with 80 disadvantaged Negro elementary school children drawn from two inner-city schools. The experimenters worked with each child individually for about 30 minutes. Most of the materials were presented with a tape recorder and experimenter intervention was systematically controlled. The students' criterion verbal behaviors (i.e., the utterance of whole sentences) were tape recorded and later judged by a linguist. The student responses on the concept production task were recorded on paper by the experimenter immediately after they were uttered. The latter responses were not tape recorded.

The experimental design is described in detail in Center Report No. 45, July, 1969. Essentially, four factors were studied: (1)discrimination of instances and non-instances of the concept; (2) verbalization of a rule; (3) application of the rule; and, (4) the ability to produce the concept in isolation. The criterion for the assessment of the first three factors was the concept production task, whereas the dependent variable for the fourth factor was the task requiring the production of whole sentences. If all of these variables had been combined in a factorial experiment, a 2 x 2 x 2 x 2 factorial design containing 16 cells would have resulted. However, such a design would have yielded impractical treatment conditions and would have grossly wasted the time of both the subjects and experimenters. Consequently, a subset of five of the sixteen cells constituted the experimental treatment conditions.

The results were both informative and provocative. First, the ability to verbalize a rule did not improve the acquisition of the concept in isolation. This finding does not confirm the results of research with college students although the differences between the studies, which include the age and IQ of the subjects and the nature of the tasks, are sufficient to account for this discontinuity. The second result was that the training in the application of the rule produced an unusually strong effect on the acquisition of the concept in isolation. It is interesting to note, in addition, that the application training was particularly effective for low IQ students. Though it was positive, the effect was not statistically significant for high IQ students. This finding provides an indication of how instruction must be tailored to accomodate the intelligence of the student population. It has long been acknowledged that instructional adaptation to individual differences is important, but the precise form of the adaptation has often been left unspecified. This experiment suggests that one important avenue of accomodation is the provision of application training for low IQ but not for high IQ students.

The third result was that the discrimination of instances of the concept did not significantly affect performance on the concept production task. It should be added that this conclusion is valid only when the instruction includes the rule and the rule application training. Thus, it remains to be determined whether discrimination training is effective when the rule and application training are not provided. It is noteworthy that a ceiling effect was apparent in the data used to ascertain the effect of the discrimination task, and consequently the effect of this variable may have been masked. Further research on this variable is clearly not precluded by the outcomes of this investigation.

The fourth finding of interest was that, on the task which required the subjects to produce the concept embedded in sentences, the control group which received no training on the concept production task was not noticeably inferior to the other subjects all of whom had the concept production training. In other words, mastery of the concept production task did not improve the students' ability to say whole sentences in which the concept was embedded. This result indicates that training on a subdivision of the criterion task may have less effect on performance of the criterion than has been supposed by many practitioners and researchers.

Direction of Future Research. The primary objective of the programmed materials which are being developed is to enable the learners to produce whole, meaningful sentences orally. Since the ability to produce the concept in isolation has less effect on the primary criterion than had been expected, it is important to focus future research directly on the criterion behavior. Accordingly, a study is now being conducted which will assess the impact of the following variables on learning to produce whole sentences: (1) verbalization of a rule; (2) application of the rule; (3) mastery of the concept in isolation; and, (4) subject variables such as socio-economic status and IQ. It is likely that mastery of the concept production task will have a pronounced effect on the utterance of whole sentences when learning with feedback is the criterion, although no effect was observed when performance without feedback was the criterion. It appears that concept production is a necessary but not a sufficient condition for the utterance of sentences. If such is the case, the information obtained in the first study regarding the variables affecting concept production can be combined with information from the current study on the production of sentences to generate increasingly precise prescriptions for the construction of programmed lessons. Regardless of that contingency, however, the findings from the current investigation will be immediately useful to the development of the programmed materials and will extend knowledge about how instructional variables must be combined and manipulated to construct effective teaching materials.

The Development of a Communication Task to be Used in the Study of Socio-Linguistic Factors in Information Exchange

At a general level, the purpose of this pilot project is to explore the social and psychological variables which affect speech in communications where task-relevant information is exchanged. Knowledge about the style of speech used in these situations seems particularly important since it is the style required in most teacher-student interactions, i.e., it is a language tool which affects how a student elicits information relevant to his questions or responds with relevant information to teacher's questions. Moreover, as was mentioned earlier, the incidence of situations which require children to use this style of speech seems much greater in the middle-class environment of the student population. Thus, the development of communication tasks for this research and knowledge about the variables which facilitate performance in these tasks should be useful in the language arts curriculum for the disadvantaged student.

The project has two developing facets. The first concerns the definition of the attributes of the speech style being investigated and includes the development of tasks and situations which elicit the speech, and the development of methods for describing and quantifying the defining attributes of the speech style. The second facet concerns the examination of variables, manipulable in the classroom setting, which affect speech in information exchange.

Relevant to the first facet is Martin Joos' analysis of style in The Five Clocks (1962). He has identified the style of speech required in the exchange of task-relevant information as consultative style. However, little empirical evidence is available concerning the social and linguistic factors that account for variation in the speech observed in these consultative situations. Thus, preliminary work is beginning in the summer of 1969 to observe the speech of college students in two situations — one, by definition, requiring consultative style, the other requiring a more formal style. Analysis of this speech is expected to yield some quantitative measures of the linguistic characteristics of consultative style.

Preliminary work on the second aspect, also beginning in the summer of 1969, focuses on one aspect of an information-exchange communication, accommodation to feedback. Specifically, it concentrates on variables which can be manipulated in the classroom to affect a speaker's accommodation to feedback.

Analysis of the feedback process in communication suggests three components: the initial behavior of the speaker, the responses of the listener, and the reaction of the speaker. "Accommodation to feedback" implies that the first two components interact to affect the third. The initial behavior of the speaker can be manipulated by changes in the task (contingencies associated with the successful completion of the task). The second component, the response of the listener, can be manipulated by the content of the verbal response and also by the characteristics (age, status, expertise) of the listener making that response. Pilot work will begin to develop a two-person communication game which will permit the manipulation of the task demands on the speaker as well as the characteristics of the receiver who provides feedback. The task will also allow assessment of the effects of these manipulations on the reaction of the speaker.

Program V: THE POLITICS OF PUBLIC EDUCATION: A COMPARATIVE STUDY OF SCHOOL BOARD OPERATIONS.

Overview

Why do some cities have liberal school boards, while others are conservative on racial and other issues? Why did some nothern school systems desegregate with little difficulty, while others became battlegrounds? Why are some urban school systems more innovative than others? And why do some school systems have very good public reputations, while others are routinely sneered at by their publics? This program is designed to at least begin to answer these questions by gathering and analyzing data from a large sample of northern school systems. Its long range goal is to contribute toward developing a theory of the relationship between the structure and style of the local political system on the one hand, and the character of local public education on the other. Such knowledge should help educators and social scientists understand how the administrative style of a school system affects the quality of education a child receives.

Its results should also have relevance to one of the challenges posed by a well known educator in his overall evaluation of R and D Centers:

> In view of the objective of the Centers to bring about improved school practice should there not be research to determine, much better than we now know, the essential or more important elements by which administrative leadership can sustain instituted change beyond the innovation state? What will ensure that changes introduced will endure long enough--but not too long? (Brownell, 1968, p. 179).

This program is in many ways an extension of a pilot study on the political conditions surrounding school desegregation (Crain, 1968) which was funded by USOE. The current work is being supported by the Carnegie Corporation.

Research Activities

The program is researching the above questions by gathering and analyzing data from 93 northern school systems, including those in every northern city of over 150,000* and a sample of cities of 50,000 to 150,000 population which have at least 3,000 Negro residents. In each city, 19 persons were interviewed, using survey questionnaires; each different respondent received a special questionnaire, but with overlapping questions so that respondents can be checked against each other. This field work was completed in March, 1969.

The result is a unique set of data--a computer tape containing over 10,000 separate bits of information for each of 93 cities. The questionnaires were repeatedly revised both before and after pretesting, so that there is a large set of reliable and valid data. Four man-years were invested in writing the 400 pages of questions. The respondents can be divided into five groups:

(1) The Panel is five persons -- the city editor of the largest newspaper, the person who was school board president in 1955, the mayor's administrative assistant, a leading politician from the party opposite the mayor's, and the person named by these four as the major civic

---

* Worcester, Mass. is excluded because it has fewer than 3,000 Negroes.

leader in the city. These respondents were asked to give an outsider's view of the school system, and to describe the general decision-making structure -- the level of controversy, descriptions of two major projects, one adopted and one rejected-- data on the participation of businessmen in civic affairs, descriptions of the election campaign of the mayor, and a list of the "power structure"-- the men whom the panel agreed (in those cities where they do agree) are the most influential men outside of government. Finally, the ex-school board president was asked to describe the way in which the board has changed in the past decade.

(2) The School Board - four board members were asked to describe how they were selected, and how the board has reacted to issues of race relations, financing, and adoption of educational innovations. They were also asked to describe the board's relations with the mayor, the superintendent, business leaders, and with civil rights leaders. Finally, personal data on the board members' attitudes and social backgrounds were collected.

(3) The Superintendent and his assistant were asked to report on the actions of the school system in the three areas of financing, educational innovation, and desegregation. The superintendent was also asked to describe his own relations with civil rights leaders, PTA's and other community groups, business leaders, and the mayor.

(4) Four Civil Rights Leaders and two other ghetto community leaders reported on the desegregation negotiations, their relations to the board, the structure of the civil rights movement, and the level and

kind of civil rights and other black protest activity. Data on their social backgrounds and attitudes were also gathered.

(5) Educational Informants -- the education reporter of the newspaper and the head of the council of PTA's were asked to report on the desegregation issue and the school board referenda campaigns.

Taken together, the staff is able to study the following aspects of the politics of public education.

(1) The relationship between the schools and the "power structure". The importance of the local power structure, meaning a small number of men who wield power without actually holding public office, has been stressed by a large number of writers, but this study provides the first opportunity to look at accurate data and contrast cities where the "power structure" is tied into the school system in different ways, and also to look at cities where there is no "power structure" as such.

(2) Differences between school boards. An earlier study (Crain,1968) indicated striking differences between cities in the kinds of school boards they had, and suggested that these differences have important policy implications. These data permit a very detailed study of school board selection.

(3) School Desegregation. The study provides a census of school desegregation activities in northern cities, as well as a comparative study of the process of decision-making in desegregation--an analysis of why some cities have taken more decisive action and had less controversy.

(4) Financing and educational change. For over a decade, increasing enrollments, rising costs, and demands to improve education for both the college-bound and the poor have forced change in the schools, and brought financial hardship. Which systems have made the greatest change? Which ones have been able to raise additional funds from the constituencies? Why?

(5) The reputation of the schools. Related to the question of financial support is the whole question of how a school system obtains the support of its public. Somehow, the elite and the residents decide that theirs is a good school system or a bad one, with little or no information on which to base their decision. One hunch is that it boils down to "good public relations", -- whatever that means. Hopefully this study will help determine what good public relations actually entail.

(6) The political behavior of superintendents. If politics is defined broadly, then the superintendency is a thoroughly political job, and much of the criticism made against superintendents is that they are poor politicians. Certainly the typical superintendent's background and experience would seem to be inadequate to the task. But is this true? Which school offices are skilled in dealing with elected officials, civic leaders, civil rights leaders, and citizens? What explains the differences?

(7) The Civil Rights Movement. There has been almost no Vigorous empirical research on the civil rights movement. This study interviewed more than 350 local leaders, as well as another 250 black community leaders and school board members and should make a very significant contribution to understanding differences in the structure of local

movements and the ideology of local leaders. Hopefully, this will explain why cities vary in the amount and style of civil rights activity, the kinds of men who become leaders, and the relations between the movement and white leaders.

One paper entitled "The Influence of Reputational and Positional Elites in School Desegregation", has been completed during the past year and will be presented at the American Sociological Association Meetings in August, 1969.

The coding, editing, and cleaning of data and preparation of master computer tapes will be completed before September 1, 1969. Systematic analysis directed toward the questions posed above will begin immediately thereafter.

INDEPENDENT PROJECTS PROGRAM

In addition to the activities which are organized into the five research and development programs, the Johns Hopkins Center also supports independent projects of research in its major problem area of the social organization of schools. During the past year there were six independent projects, three of which have been completed and three of which will be continued in the Center during the next year.

Student Involvement in the Decision-Making Process of Secondary Schools

One central component of the social organization of schools is the authority structure and how the distribution of authority becomes reflected in the various decision-making procedures in the school. This project involves an investigation of this area with a survey of the students, teachers, and administrators in about ten high schools. Field work will begin in the fall of 1969.

During the past year, a proposal for this research was prepared, and a grant was made to the Center by the Division of Comprehensive and Vocational Education at USOE. Survey instruments were prepared during this period, and provisional agreement to participate in the survey has been obtained from part of the sample of schools.

The study has several objectives. Part of the survey output will be descriptive, with the intention of developing a typology of the varieties of decision-making procedures in secondary schools. Another major goal of the study is to investigate possible effects on students of different kinds and degrees of participation in school decision-

4

making.

In spite of the public interest in the recent demands from high school students for a greater voice in the decisions taken in their schools, very little is known about the kinds of decision-making procedures which presently exist. This project is one of only two studies in the area being supported by USOE. In attempting to begin to remedy this lack of knowledge, the Center survey aims to distinguish the conditions under which apparently similar decision-making mechanisms (such as student councils) differ in the degree to which they are viewed as legitimate and effective procedures rather than activities with little meaning or importance by students. Decision-making processes concerning different content areas (for example, school rules for governing behavior, or assignments of individual students to programs and classes) and using different authority distributions will be examined within the context of legitimacy.

Hypotheses on the effects of different degrees of involvement in decision-making on student behavior are classified into four areas. First, are hypotheses about the commitment of students to the school and the degree to which the students function to make the school a self-policing or self-regulating organization. A second set of hypotheses concerns other aspects of the school climate by viewing the activities in which students participate as sources of specific peer group values which may not be provided usually in the classroom. Thirdly, hypotheses will be investigated on the ways in which a student's sense of personal efficacy and motivation to learn may be influenced by his experiences in decision-making in school. Finally, the "equality" of the decisions which typically result from different procedures will be examined.

The current year has been devoted primarily to planning the research and developing the survey instruments for the study of the decision-making processes. The collection and analysis of the survey data are scheduled for FY70, with the final reports to be prepared during this period. It is anticipated that this research will help fill the gap in understanding of one important component of the social organization of schools.

Before the emphasis of the project was changed to decision-making, some work was completed on other aspects of the social organization of schools. Center Report No. 28 (McDill, Rigsby and Meyers, April, 1969) reported results from a study of twenty high schools, showing the nature of the effects of a number of dimensions of the educational climates of schools on achievement and college plans of students. Sources for the climate effects were not explained by community differences in "cultural" facilities nor by contrasts in school curriculum and facilities. However, the degree of parental involvement in and commitment to the school did qualify as a contextual variable which is a source of climate effects.

In another Center Report, Lacey (No. 46, July, 1969) examined some of the effects of eliminating the streaming or tracking of students into classes according to their past performance. Using data collected in an English grammar school this paper showed how the original disparities in a standardized achievement test were eliminated after this particular organizational change.

Comparative Educational Organizations, Their Inputs and Outputs

Another independent project also focuses on the structural arrangements in schools and educational systems, but uses data assembled from published sources on 77 different countries. Several dimensions of the structure of the institution of education in different cultural settings have been defined and data assembled to measure them. One analysis relates the characteristics of the political and economic systems of the countries to the development of various components of the educational institution. A general thesis being examined here is that the educational system develops in stages, depending on the general level of development of the economy, with different aspects of the political and economic structure determining the educational system of the country at each level. A second line of analysis involves an examination of the impact which the type of educational system of a country has on certain short and long term manpower and skills outcomes.

The assembly, coding, and preparation of data, as well as the computer analysis for this project, will have been completed by the end of the third quarter of fiscal year 1969. The final report of the project will be completed by the end of the year.

An Economic Analysis of Equality of Educational Opportunity

This project will also be completed in fiscal year 1969. Three reports will have been produced from economic analyses of different aspects of equality of educational opportunity at different levels of the educational system.

Center Report No. 47 (Owen, August 1969) uses data from the USOE survey, Equality of Educational Opportunity (Coleman *et al.*, 1966), and from the U.S. Census to analyze the allocation of various educational resources among school systems and elementary schools with different racial and social class compositions. It was found that the most experienced teachers and those with higher measured verbal achievement are more likely to be located in schools attended by the less economically disadvantaged, white children. It was concluded that the immediate cause of the economic and racial biases in the allocation of tracking resources lies in the teacher assignment system--the single city-wide salary schedule, the allocation of attractive teaching posts to the most experienced teachers, and in some cities the informal pressures that are apparently used to keep black teachers in black schools.

Center Report No. 24 (Owen, August 1968) applies the techniques of cost-benefit analysis to the problem allocating subsidy funds to college students. The study shows the desirability of using such economic principles as comparative advantage, discounting the future benefits, and a cut-off benefit-cost ratio in the allocation of these funds. An attempt is made to show the superiority of these methods over a system of selecting students solely in terms of their intellectual ability.

Center Report No. 26 (Owen, September 1968) shows that the use of a cross-the-board subsidy to education in the form of tuition reductions or low interest loans to college students are sub-optimal methods of gaining the maximum advantage from programs designed to improve the workings of political democracy. The logic of majority voting is used to show that these benefits can be gained more efficiently from a much more egalitarian distribution of resources. The desirability of raising the less able and average citizens to the level of truly qualified voters is discussed.

Influence Processes in the Schools

This project, which will probably have to be terminated at the end of FY 69 because of federal budgetary problems, consists of two interrelated studies which consider the interrelationships among teachers and between teachers and students in the school setting. The first study has been concerned with the peer relationships among teachers who make up the faculty of a given elementary school. Center Report No. 37 (Fennessey, November 1968) presents the results of a pilot study concerning the various determinants of judgments (regarding school integration and team teaching, for example) made by school teachers and how these judgments are related to informal social groupings that form among the teachers in a school.

The second study focuses upon aspects of role relationships between teachers and students at the high school level. An investigation is being conducted on teacher characteristics which students use in selecting the teacher whom they like the best and how these sociometric choices of students are modified when the students' personal and social characteristics are taken into account.

Both of these studies have been used as a basis for three working papers, completed during the year, concerning a variety of aspects of the school as a social system.

Classroom Applications of Research in Expectation Theory

A second project which concerns influence processes with direct applications to relationships among teachers and students and between the two groups is using laboratory experiments to develop a coherent body of knowledge on expectation processes. The general theory from which the project is derived is concerned with the emergence and maintenance of power and prestige structures in face-to-face, task oriented groups. The part of the theory tested and refined here is concerned with the relations between the expectations for performance, evaluations, and conceptions of ability, and their effects upon certain features of interaction, such as the likelihood of accepting a given chance to perform or of accepting influence in case of disagreement. In applications to the social organization of schools, there is currently a growing interest in the subject of the expectations held by the student and by the teacher for the student's academic performance, and the effect of these expectations upon actual and perceived performance (e.g., Rosenthal and Jacobson, 1968). Other potential applications of the general theory, within the realm of social organization of schools, include faculty meetings, children's study or play teams, and teams of teachers and teachers aides.

During the past two months data collection from 100 subjects in a laboratory experiment has been completed. The procedures called for pairs of subjects, both juniors in high school, to have a series of performances evaluated by an evaluator described either as being a junior in college (high status conditions) or as an eighth grader(low status conditions). To one of each pair of subjects the evaluator gave a high proportion of positive evaluations; to the other a high proportion of negative evaluations. Then the pairs of subjects worked together at the task, and their relative likelihoods of accepting influence under conditions of controlled disagreement were recorded as the measure of their expectation states.

Data analysis and report preparation are scheduled for the latter part FY 1969, as well as a second experiment which will investigate problems of stability and change in the expectations held for one's own and other's performances. In addition, an attempt will be made to reproduce some of the effects of earlier laboratory studies in the more natural environment of a grade school.

A second major product of this project has been the establishment of a small groups laboratory in the Dept. of Social Relations at Johns Hopkins, a facility now available for other researchers who are associated with the Center. The special laboratory equipment used for this year's experiments can be used for future research in Expectation Theory, and the physical setting can be adopted for more general small groups research.

The Computer as a Responsive Educational Environment

In contrast to most experiments in computer-assisted instruction, which utilize the same pedagogical procedure as programmed instruction texts, the staff of this project seeks to examine the possibilities of using the computer for a more radical transformation of the learning environment. The authors of most computer programs intended for instructional use, like those of programmed textbooks, decide beforehand the questions to ask the student, what responses are correct, and the causes and remedial action to take for any incorrect responses. However, there is another way to view computers as learning tools: as a member of the class of responsive environments--and a particularly flexible member of that class. As such, the computer may be used to simulate relevant aspects of physical environments, economic environments, and social environments of logical operations. By interaction with a computer constituting such environments, a student becomes immersed in a different learning setting.

While this project is very modest in terms of the Center resources devoted to it, two activities have been completed during FY 1969. First, two exercises were developed and programmed for a time-shared computer system, both of which are examples of the computer as a responsive educational environment. Each problem, one in arithmetic and the other in mathematics, is an exercise in which the student is required to discover an unknown. The student supplies an "input" to the problem, the computer performs an operation, and then supplies an "output" to the student. On the basis of the input and output supplied, the student infers what logical or mathematical process is involved. Pre-tests were conducted with elementary school students, and both exercises were revised on the basis of feedback from subjects.

The second activity has been an experiment conducted to test the effects of group vs. individual playing of a computerized economics game. This game, Surfboard, was developed earlier at Johns Hopkins, and is a particularly complex example of a computer simulated environment with which the student interacts. Results of the experiment will be published in a Center report during the last quarter of FY 1969.

ADMINISTRATION AND SUPPORT SERVICES PROGRAMS

Administration

Much of the effort of the staff in this program is devoted to program planning and coordination and to administrative tasks for USOE such as budget preparation and updating the information reporting system. The staff is also responsible for all accounting and personnel services connected with the Center, communication with outside agencies, coordination among R and D programs of the Center, and preparation and distribution of all R and D reports emanating from the Center.

Support Services

This program provides two essential types of services to all substantive programs and projects. These services are discharged by two separate units, the Computer and Data Processing Unit and the Experimental Design and Statistical Analysis Unit.

The Center IBM 1401 Computer and ancillary equipment are located in the former unit, which is responsible for providing services such as programming and tabulation and processing of data from experiments and field surveys.

The second unit began operation officially on September 1, 1968. It had been operating without cost to the Center on an informal, part-time basis since September, 1967. The staff conducted three types of activities during the past year:

(1) During the academic year, a weekly two-hour seminar on a topic in research methodology applicable to one or more R and D programs at the Center was held for Center staff and other interested persons.

(2) Aid was given to Center researchers on their problems of experimental design, statistical analysis, measurement, and data-processing, including research on such topics when needed. The staff published the results of some of this methodological research in professional journals.

(3) Periodically, an informal newsletter was issued calling attention to recent developments in research methodology and measurement.

These three activities will be continued during the coming year.

APPENDICES

Appendix A

PUBLICATIONS

CENTER FOR THE STUDY
OF SOCIAL ORGANIZATION OF SCHOOLS
JOHNS HOPKINS UNIVERSITY
BALTIMORE, MARYLAND 21218

Publication No.	Date	Title	Author (s)
1	Sept. 1967	Race Relations and Social Change	James S. Coleman
2	Nov. 1967	The Relative Influence of School Desegregation and Classroom Desegregation on the Academic Achievement of Ninth Grade Negro Students	James McPartland
3	June 1967	School Desegregation in Baltimore	Dollie R. Walker Arthur L. Stinchcombe Mary S. McDill
4	May 1967	An Exploratory Study of Non-English Speaking Homes and Academic Performance	James Fennessey
5	March 1967	Subcultural Differences in Children's Language Development	Doris R. Entwisle
6	March 1967	Developmental Sociolinguistics: Inner City Children	Doris R. Entwisle
7	Oct. 1967	Organization of Schools to Provide Academic Aid and Therapeutic Counseling to Disadvantaged Children	Martha O. Roseman
8	Nov. 1967	Simulation Games and Social Theory	James S. Coleman
9	Nov. 1967	Innovations in the Structure of Education	James S. Coleman
10	Dec. 1967	Simulation Games and Control Beliefs	Sarane S. Boocock Erling O. Schild Clarice Stoll

CENTER FOR THE STUDY
OF SOCIAL ORGANIZATION OF SCHOOLS
JOHNS HOPKINS UNIVERSITY
BALTIMORE, MARYLAND 21218

Publication No.	Date	Title	Author (s)
11	Nov. 1967	The Concept of Equality of Educational Opportunity	James S. Coleman
12	Nov. 1967	The Struggle for Control of Education	James S. Coleman
13	Dec. 1967	Equality of Educational Opportunity, Reconsidered	James S. Coleman
14	Jan. 1968	Toward A Discipline of Curriculum Theory	John S. Mann
15	March 1968	Class, Status, and Poverty	Peter H. Rossi & Zahava Blum
16	March 1968	A Preliminary Study of Standard Speech Patterns in the Baltimore City Public Schools	Catherine Garvey & Paul McFarlane
17	March 1968	Social Class Research and Images of the Poor: A Bibliographic Review	Zahava Blum & Peter H. Rossi
18	March 1968	Responsibility of Schools in the Provision of Equal Educational Opportunity	James S. Coleman
19	May 1968	Differences in Language, White and Negro Grade-School Children 1,2	Doris R. Entwisle Ellen Greenberger
20	July 1968	Need Achievement, Curiosity and Sense of Control: Pilot Study for a Large-Scale Investigation	Ellen Greenberger & Doris R. Entwisle

CENTER FOR THE STUDY
OF SOCIAL ORGANIZATION OF SCHOOLS
JOHNS HOPKINS UNIVERSITY
BALTIMORE, MARYLAND 21218

Publication No.	Date	Title	Author (s)
21	June 1968	The Segregated Student in Desegregated Schools: Sources of Influences on Negro Secondary Students	James McPartland
22	May 1968	Games as Vehicles for Social Theory	James S. Coleman
23	July 1968	Player Characteristics and Strategy in a Parent-Child Simulation Game	Clarice S. Stoll
24	August 1968	An Economic Analysis of College Scholarship Policy	John D. Owen
25	August 1968	The Evaluation of Equality of Educational Opportunity	James S. Coleman
26	Sept. 1968	Educational Opportunity, Democratic Theory, and the Economics of Educational Subsidy	John D. Owen
27	Oct. 1968	Some Hypothetical Experiments on Variations in School Components and Selected Educational Outcomes	James McPartland & J. Timothy Sprehe
28	April 1969	Educational Climates of High School: Their Effects and Sources	Edward L. McDill Leo C. Rigsby Edmund D. Meyers, Jr.
29	Dec. 1968	Autotelic Behavior in Socialization	Michael Inbar Clarice S. Stoll

CENTER FOR THE STUDY
OF SOCIAL ORGANIZATION OF SCHOOLS
JOHNS HOPKINS UNIVERSITY
BALTIMORE, MARYLAND 21218

Publication No.	Date	Title	Author (s)
30	Dec. 1968	Game Experience and Socialization: An Exploratory Study of Sex Differences	Clarice S. Stoll Michael Inbar James S. Fennessey
31	Dec. 1968	Socialization and Games: An Exploratory Study of Race Differences	Clarice S. Stoll Michael Inbar James S. Fennessey
32	April 1969	Development of a Curiosity Scale	Robert Hogan Ellen Greenberger
35	Nov. 1968	Content Analysis of Stories for Curiosity Imagery: A Manual	Ellen Greenberger Jeanne O'Connor Annemette Sorenson
36	Dec. 1968	A Scoring Guide For the Greenberger-Entwisle Need-Achievement Pictures	Ellen Greenberger John Kervin
37	Nov. 1968	The Faculty Peers	James S. Fennessey
38	March 1969	User's Handbook For Computation Center	Nancy Karweit
39	Feb. 1969	Pilot Studies of Role Behaviors in A Parent-Child Simulation Game	Paul T. McFarlane
40	Feb. 1969	Incentives in American Education	James S. Coleman
41	May 1969	Adjective Usage	Doris R. Entwisle Catherine Garvey

CENTER FOR THE STUDY
OF SOCIAL ORGANIZATION OF SCHOOLS
JOHNS HOPKINS UNIVERSITY
BALTIMORE, MARYLAND 21218

Publication No.	Date	Title	Author (s)
42	May 1969	The Effects of Two Simulation Games on the Opinions and Attitudes of Selected Sixth, Seventh, and Eighth Grade Students	Karen C. Cohen
43	June 1969	Semantic Systems of Minority Groups	Doris R. Entwisle
44	June 1969	Using Simulation Games in the Classroom	Lindy Harry
45	July 1969	Effects of Discrimination, Grammatical Rules and Application of Rules on the Acquisition of Language Concepts in Children	John T. Guthrie Thelma L. Baldwin
46	August 1969	Organizational Change in Schools: Some Concomitants of Destreaming	Colin Lacey
47	August 1969	Economic and Racial Bias in the Distribution of Educational Resources in Large American Cities	John D. Owen
48	July 1969	A Method for the Collection and Analysis of Retrospective Life Histories	Zahava D. Blum Nancy L. Karweit Aage B. Sørensen

CENTER FOR THE STUDY
OF SOCIAL ORGANIZATION OF SCHOOLS
JOHNS HOPKINS UNIVERSITY
BALTIMORE, MARYLAND 21218

Publication No.	Date	Title	Author (s)
-		"Further Analysis of Equality of Educational Opportunity Survey," Appendix C1 in U.S. Commission on Civil Rights, Racial Isolation in the Public Schools. Washington: U.S. Government Printing Office, 1967	James McPartland & Robert L. York
-	Feb. 1968	Simulation Games in Learning Order from: Sage Publications, Inc. 275 South Beverly Drive Beverly Hills, Calif. 90212	Sarane S. Boocock & E. O. Schild
		Working Papers	
	Sept. 1968	Multi-Level Analysis in Educational Research	James Fennessey
	April 1969	The Influence Processes in the School (#1)	James Fennessey Mary McDill
	May 1969	The Influence Processes in the School (#2)	James Fennessey Mary McDill
	June 1969	The Influence Processes in the School (#3)	James Fennessey Mary McDill
	May 1969	Observations of Reactions to the Simulation Ghetto	Dove Toll

Journal Publications -- Reprint Series

1. Doris R. Entwisle, "Subcultural Differences in Children's Language Development," International Journal of Psychology, Vol. 3 No. 1, 1968, 13-22.

2. Doris R. Entwisle, "Developmental Sociolinguistics: Inner City Children," The American Journal of Sociology, Vol. 74 No. 1, July 1968, 37-49.

3. Martha O. Roseman, "Organization of Schools to Provide Academic Aid and Therapeutic Counseling to Disadvantaged Children," The New Jersey Education Association Review, Vol. 41, No. 8, April 1968, 1-4.

4. James S. Coleman, "The Concept of Equality of Educational Opportunity," Harvard Educational Review, Vol. 38, No. 1, Winter 1968, 7-22.

5. John S. Mann, "A Discipline of Curriculum Theory," The School Review, Vol. 76, No. 4, December 1968, 359-378.

6. Arthur L. Stinchcombe, Mary S. McDill, and Dollie R. Walker, "Demography of Organizations," The American Journal of Sociology, Vol. 74, No. 3, November 1968, 221-229.

7. Mary S. McDill, Arthur L. Stinchcombe, Dollie Walker, "Segregation and Educational Disadvantage: Estimates of the Influence of Different Segregating Factors," Sociology of Education, Vol. 41, No. 3, Summer 1968, 239-246.

8. Peter S. Houts and Doris Entwisle, "Academic Achievement Effort Among Females: Achievement Attitudes and Sex-Role Orientation," Journal of Counseling Psychology, Vol. 15, No. 3, 1968, 284-286.

9. James McPartland, "The Relative Influence of School Desegregation and Classroom Desegregation on the Academic Achievement of Ninth Grade Students," forthcoming in Journal of Social Issues, Vol. 25, No. 4, 1969.

10. Arthur L. Stinchcombe, Mary McDill, and Dollie R. Walker, "Is There a Racial Tipping Point in Changing Schools?" Journal of Social Issues, Vol. 25, No. 1, 1969, 127-136.

11. Doris R. Entwisle and Richard Conviser, "Input-Output Analysis in Education," The High School Journal, Vol. 52, No. 4, January 1969, 192-198.

12. Edward L. McDill, Leo C. Rigsby, and Edmund D. Meyers, Jr., "Educational Climates of High Schools: Their Effects and Sources," The American Journal of Sociology, Vol. 74, No. 6, May 1969, 567-586.

13. Edward L. McDill, James McPartland, and J. Timothy Sprehe, "Research and Development Center for Social Organization of Schools," *Journal of Research and Development in Education*, Vol. 1, No. 4, Summer 1968, pp. 151-168.

Appendix B

REFERENCES

Anderson, Raymond, *Consumer Experimental Evaluation*. Forthcoming Report, Center for the Study of the Social Organization of Schools and the Learning Process, The Johns Hopkins University.

Bereiter, C., and S. Engelmann, *Teaching Disadvantaged Chidren in the Preschool*. Englewood Cliffs, N. J.: Prentice-Hall, 1966.

Beswick, D. G., "Theory and Measurement of Human Curiosity," Cambridge, Mass.: Harvard University, unpublished doctoral dissertation, 1964.

Blau, Peter M., and Otis Dudley Duncan, *The American Occupational Structure*. New York: John Wiley & Sons, Inc., 1967.

Boocock, Sarane S., "An Experimental Study of the Learning Effects of Two Games with Simulated Environments," pp. 107-134 in Boocock and Schild, 1968.

Boocock, Sarane S., "Instructional Games," in *Encyclopedia of Education*. New York: MacMillan Company, (forthcoming).

Boocock, Sarane S., "The *Life Career* Game," *Personnel and Guidance Journal*, (December 1967), pp. 328-334.

Boocock, Sarane S., and James S. Coleman, "Games with Simulated Environments in Learning," *Sociology of Education*, (Summer 1966), pp. 215-236.

Boocock, Sarane S., and E. O. Schild (eds.), *Simulation Games in Learning*. Beverly Hills: Sage Publications Inc., 1968.

Brottman, Marvin A. (ed.), "Language Remediation for the Disadvantaged Preschool Child." *Monographs of the Society for Research in Child Development*, 33. Chicago: University of Chicago Press, 1968.

Brownell, S. M., "R and D Centers and the Schools: A Reaction to Progress Reports," *Journal of Research and Development in Education*, 1(Summer 1968), pp. 173-180.

Cazden, Courtney B., "Subcultural Differences in Child Language: An Interdisciplinary Review," *Merrill-Palmer Quarterly of Behavior and Development*, 12(March 1966), pp. 185-219.

Coleman, James S., "Games as Vehicles for Social Theory," *American Behavioral Scientist*, (July-August 1969).

Coleman, James S., "Games--New Tools for Learning," *Scholastic Teacher*, 15(November 1967), p. 9.

Coleman, James S., "Learning through Games," *National Education Association Journal*, 56(January 1967), pp. 59-70.

Coleman, James S., Sarane S. Boocock, and E. O. Schild (eds.), Special issues of *American Behavioral Scientist* devoted to "Simulation Games and Learning Behavior," (October and November 1966).

Coleman, James S., E. O. Campbell, *et al.*, *Equality of Educational Opportunity*. Washington: U. S. Government Printing Office, 1966.

Crain, Robert J., *The Politics of School Desegregation*. Chicago: Aldine Press, 1968.

Deutsch, Martin, "The Disadvantaged Child and the Learning Process," pp. 163-179 in Harry A. Passow (ed.), *Education in Depressed Areas*. New York: Teachers College Press, 1963.

Duncan, Otis Dudley, David L. Featherman, and Beverly Duncan, *Socioeconomic Background and Occupational Achievement: Extensions of a Basic Model*. Washington, D. C. : U. S. Department of Education, 1968.

Entwisle, Doris R., "Semantic Systems of Children," in F. B. Williams (ed.), *Language and Poverty: Perspectives on a Theme*. Chicago: Markham Publishing Co., in press.

Farley, Reynolds, and Karl E. Taeuber, "Population Trends and Residential Segregation Since 1960," *Science*, (March 1968), pp. 953-956.

Garvin, P. L., *On Linguistic Method*. The Hague: Mouton and Co., 1964.

Gleason, H. A., Jr., *Linguistics and English Grammar*. New York: Holt, Rinehart and Winston, 1965.

Inbar, Michael, "Development and Educational Use of Simulations: An Example--*The Community Response Game*," *International Journal of Experimental Educational Research*, VI(1969b), pp. 3-42.

Inbar, Michael, "Individual and Group Effects on Enjoyment and Learning in a Game Simulating a Community Disaster," pp. 169-190 in Boocock and Schild, 1968.

Inbar, Michael, "Participating in a Simulation Game," Journal of Applied Behavioral Science, in press, (1969c).

Inbar, Michael, "Toward a Sociology of Autotelic Behavior," La Critica Sociologica, in press, (1969a).

Joos, Martin, The Five Clocks. Publication 22, Indiana University Research Center in Anthropology, Folklore, and Linguistics, Indiana University, 1962.

Klinger, E., "Fantasy Need Achievement as a Motivational Construct," Psychological Bulletin, 66(1966), pp. 291-308.

Koen, Frank, Alton Becker, and Richard Young, "The Psychological Reality of the Paragraph," Journal of Verbal Learning and Verbal Behavior, (May 1969) pp. 49-53.

Labov, William, A Study of Non-Standard English. Washington, D. C.: Center for Applied Linguistics, 1969.

Labov, William and Joshua Waletzky. "Narrative Analysis: Oral Versions of Personal Experience." Proceedings of the 1966 Annual Spring Meeting of the American Ethnological Society. Seattle: University of Washington Press, 1966.

Labov, William, et al., "A Study of the Non-Standard English of Negro and Puerto Rican Speakers in New York City," Final Report, Cooperative Research Project, No. 3288. Volume I. Washington, D. C.: Office of Education, 1968.

Loman, Bengt, Conversations in a Negro American Dialect. Washington, D. C.: Center for Applied Linguistics, 1967.

McDill, Edward L., James McPartland, and J. Timothy Sprehe, "Research and Development Center for Social Organization of Schools," Journal of Research and Development in Education, 1(Summer 1968), pp. 151-168.

Maw, W. H., and E. W. Maw, Differences Between Children with High and Low Curiosity: A Summary. Moravia, New York: Chronical Guidance Publications, 1964-1965.

Pederson, Lee A., "Some Structural Differences in the Speech of Chicago Negroes," pp. 28-51 in R. Shuy (ed.), Social Dialects and Language Learning. Champaign, Ill.: National Council of Teachers of English, 1965.

Raph, Jane B., "Language Development in Socially Disadvantaged Children," *Review of Educational Research*, 5(December 1965), pp. 389-400.

Rosenthal, Robert, and Lenore F. Jacobson, *Pygmalion in the Classroom*. New York: Holt, Rinehart, and Winston, 1968.

Schild, E. O., "The Shaping of Strategies," pp. 143-154 in Boocock and Schild, 1968.

Shuy, Roger, *A Selective Bibliography on Social Dialects*. Washington, D. C.: Center for Applied Linguistics, 1968.

Shuy, Roger, Walter A. Wolfram, and William K. Riley, "Linguistic Correlates of Social Stratification in Detroit Speech," *Final Report, Cooperative Research Project No. 6-1347*. Washington, D. C.: Office of Education, 1967.

Stewart, W. A., "Foreign Language Teaching Methods in Quasi-Foreign Language Situations," pp. 1-15 in W. A. Steward (ed.), *Non-Standard Speech and the Teaching of English*. Washington, D. C.: Center for Applied Linguistics, 1964.

Stoll, Clarice S., and Sarane S. Boocock, "Simulation Games for the Social Studies," *Audiovisual Instruction*, (October 1968), pp. 840-842.

Stoll, Clarice S., and Michael Inbar (eds.), Special issue of *American Behavioral Scientist* devoted to "Social Simulation," (July-August 1969).

Stoll, Clarice S., and Paul McFarlane, "Player Characteristics and Interaction in a Parent-Child Simulation Game," *Sociometry*, (September 1969).

Toll, Dove. "Adminstrator's Manual for *Ghetto*." 1969b

Toll, Dove. "Observations of Reactions to the Simulation, *Ghetto*." (mimeo.) 1969a.

U. S. Commission on Civil Rights, *Racial Isolation in the Public Schools*, Volume II. Washington, D. C.: Government Printing Office, 1967.

Wolfram, Walter A., *A Sociolinguistic Description of Detroit Negro Speech*. Washington, D. C.: Center for Applied Linguistics, 1969.

Zaltman, Gerald, "Degree of Participation and Learning in a Consumer Economics Game," pp. 205-216 in Boocock and Schild, 1968.

Appendix C

DISTRIBUTION OF THIS REPORT

U. S. Office of Education

R and D Centers

Regional Laboratories

ERIC System

Johns Hopkins R and D Center
Outside Advisory and
Evaluation Committee

Johns Hopkins R and D Center
Professional Staff

Baltimore City Public School
System

Maryland State Department of
Education